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RESEARCH MEMORANDUM

STATIC LONGITUDINAL AND LATERAL STABILITY AND CONTROL DATA FROM AN EXPLORATORY INVESTIGATION AT A MACH NUMBER OF 6.86 OF AN AIRPLANE CONFIGURATION HAVING A WING OF TRAPEZOIDAL PLAN FORM

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Langley Field, Va.

NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS

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SUMMARY

An investigation to determine the static longitudinal and lateral stability and control characteristics of an airplane configuration having a trapezoidal wing with modified hexagonal airfoil section and tail surfaces with 5° semiangle wedge sections has been carried out in the Langley 11-inch hypersonic tunnel. The tests were made at a Mach number of 6.86 and a Reynolds number of 343,000 based on wing mean aerodynamic chord. Data were obtained for angles of sideslip from -2° to 8° and angles of attack from -5° to 25° for the complete model with various combinations of its tail surfaces. The horizontal-tail incidence was varied from -20° to 2°, and the vertical-tail incidence was varied from -6° to 6°. The longitudinal stability data are referred to the stability-axis system, while the lateral stability data are referred to the body-axis system.

INTRODUCTION

The aircraft configurations previously investigated experimentally at hypersonic speeds have been restricted mainly to missile types which were not required to be able to land and which, therefore, had relatively small wings or wings of low aspect ratio. The purpose of the present investigation was to determine the characteristics of a configuration conforming more closely to a piloted aircraft having a wing area sufficient for conventional landing. Of the various possible configurations, one was selected for this exploratory study which was expected to have satisfactory low-speed characteristics and satisfactory transonic characteristics. This configuration (fig. 1) employs a trapezoidal wing and the arrangement, in general, is similar to conventional airplanes. Two particular features were incorporated which are believed to be desirable for hypersonic operation - relatively large leading-edge radii for both wing and tails and wedge-shaped sections for the tails. The large leading-edge radius is essential in order to keep the heat-transfer rates within feasible limits, and the wedge tail sections were selected to provide the desired tail effectiveness with tail surfaces of conventional size (ref. 1).

Six-component data have been obtained both for the complete model and for various components. The static longitudinal and lateral stability data for the complete model and various combinations of its components at a Mach number of 6.86 are presented in references 2 and 3, respectively. The static longitudinal and lateral stability data at a Mach number of 4.06 may be found in reference 4. The longitudinal and lateral control characteristics at a Mach number of 4.06 may be found in reference 5. The present paper contains the static longitudinal and lateral stability and control results for the complete model and various combinations of its tail surfaces at a Mach number of 6.86. Detailed analysis of the stability parameters is omitted in order to expedite release of this information.

COEFFICIENTS AND SYMBOLS

The results of the tests are presented as standard NACA coefficients of forces and moments. The longitudinal data are referred to the stability-axis system and the lateral data are referred to the body-axis system. The body- and stability-axis systems are illustrated in figure 2 and the axis transfer equations are given in the appendix. As indicated in the appendix, lateral-force and pitching-moment coefficients are unchanged in this transfer of axes. The moment reference is at 54 percent of the wing mean aerodynamic chord (52.66 percent of the body length measured from the nose). The coefficients and symbols are defined as follows:

C_L lift coefficient, $-Z_S/qS$

C_D drag coefficient, $-X_S/qS$ (at $\beta = 0^\circ$)

L/D lift-drag ratio, C_L/C_D

C_N normal-force coefficient, $-Z_B/qS$

C_Y lateral-force coefficient, Y/qS

C_l rolling-moment coefficient, L_B/qSb

C_m	pitching-moment coefficient, $M'/qS\bar{c}$
C_n	yawing-moment coefficient, N_B/qSb
X	force along X-axis
Y	force along Y-axis
Z	force along Z-axis
L	moment about X-axis
M'	moment about Y-axis
N	moment about Z-axis
q	free-stream dynamic pressure
S	total wing area including area submerged in fuselage
b	wing span
c	wing chord
$\bar{c}$	wing mean aerodynamic chord
c_t	tail root chord
M	Mach number
R	Reynolds number
α	angle of attack, deg
β	angle of sideslip, deg
ϵ	effective downwash angle, deg
i_H	incidence angle of horizontal tail, deg
i_V	incidence angle of vertical tail, deg
$\frac{\partial C_L}{\partial \alpha}$	rate of change of lift coefficient with angle of attack

$\frac{\partial C_m}{\partial C_L}$ rate of change of pitching-moment coefficient with lift coefficient

$\frac{\partial C_m}{\partial i_H}$ rate of change of pitching-moment coefficient with incidence angle of horizontal tail

$\frac{\partial \epsilon}{\partial \alpha}$ rate of change of effective downwash angle with angle of attack

C_{Y_β} rate of change of lateral-force coefficient with angle of sideslip at zero sideslip angle, $\left(\frac{\partial C_Y}{\partial \beta}\right)_{\beta=0}$

C_{l_β} rate of change of rolling-moment coefficient with angle of sideslip at zero sideslip angle, $\left(\frac{\partial C_l}{\partial \beta}\right)_{\beta=0}$

C_{n_β} rate of change of yawing-moment coefficient with angle of sideslip at zero sideslip angle, $\left(\frac{\partial C_n}{\partial \beta}\right)_{\beta=0}$

Subscripts:

B body-axis system

S stability-axis system

MODELS AND APPARATUS

Models

The model used for the present tests is shown in figure 1. Details concerning the model are given in the three-view drawing (fig. 3), in the sketches of the airfoil sections (fig. 4), and in the table of geometric characteristics (table I). The model was equipped with removable tail surfaces which enabled the following tail combinations to be tested on the fuselage - complete model, vertical tails, horizontal tail, horizontal tail and top vertical tail, horizontal tail and bottom vertical tail. (See fig. 5.)

The model with removable tails used in the present tests differed slightly from the model with fixed tails used in the tests of reference 2 and 3 inasmuch as the small fillet at the fuselage-tail junctures necessary for attachment of the fixed tail surfaces was omitted for the present tests; however, there was no gap at these junctures for either model at zero tail incidence. The method of attachment of horizontal and vertical tails to the body, and the gap resulting from deflection of the tail surfaces, is illustrated in figure 6.

The complete model mounted for testing in the tunnel is shown in figure 7. A discussion of some of the design features of the model is included in reference 2.

Balance and Model Support

Six-component force and moment measurements were made by means of two strain-gage balances. Five components, including normal force, lateral force, pitching moment, rolling moment, and yawing moment were measured on a balance mounted inside the model. The sixth component, chord force, was obtained on a two-component external balance measuring normal force and chord force.

The five-component balance was initially designed to measure only four components; therefore, in order to adapt the balance for use in the present program, strain gages were added to the balance sting and calibrated to measure rolling moment. This method of obtaining a rolling-moment component resulted in less sensitivity than desired; however, the resulting sacrifice in accuracy was considered more than compensated for by the saving of the time necessary for the design, construction, and calibration of a new balance.

The model was attached to the balance so that constant geometry between model and balance was maintained for all test angles. The model was placed at an angle of sideslip by means of a bent sting; angles of attack were obtained by rotating the model and balance about a horizontal axis normal to the wind stream. This type of model rotation necessitated calculation of corrected angles of attack and sideslip. Model deflections due to aerodynamic loads were incorporated in these corrected test angles. These model deflections were obtained through the use of angles measured from schlieren photographs and the balance calibration.

Wind Tunnel

The tests were conducted in the Langley 11-inch hypersonic tunnel. For this investigation the tunnel was equipped with a single-step two-dimensional nozzle constructed of Invar. The nozzle was designed by the method of characteristics with a correction made for boundary layer and operates at an average Mach number of 6.86. The duration of each run was about 80 seconds, and the variation of test-section Mach number with time is negligible after the first 15 seconds of running time. This constant Mach number flow made it possible to obtain forces for several angles of attack during each run. The model was held at low angles of attack for starting and stopping the runs in order to minimize shock loads on the strain-gage balance which supports the model.

Tests

Tests were made at an average stagnation temperature of 675° F to avoid air liquefaction (ref. 6), a stagnation pressure of 20 atmospheres absolute, and a test Mach number of 6.86. These conditions correspond to a Reynolds number of 343,000 based on wing mean aerodynamic chord. The absolute humidity was kept to less than 1.87×10^{-5} pounds of water per pound of dry air for all tests. Tests were made at angles of sideslip β from -2 to 8° through an angle-of-attack range of -5° to 25°. The horizontal-tail incidence was varied from -20° to 2°, and the vertical-tail incidence was varied from -6° to 6°.

PRECISION OF DATA

The probable uncertainties in the force and moment coefficients for individual test points - due to the balance system and variations in the dynamic pressure - have been evaluated and are presented as follows:

C_N	±0.02
C_m	±0.005
C_Y	±0.005
C_n	±0.0015
C_l	±0.003

In general, the faired curves should be more accurate than these values.

The angle of attack α and angle of sideslip β were accurate within ±0.10°.

PRESENTATION OF RESULTS

The experimental aerodynamic characteristics of the complete model and various combinations of its tail surfaces are given in tables II to VII. The data for the complete model with zero tail incidence

($i_H = 0$; $i_V = 0$) presented in references 2 and 3 have been supplemented by additional data. These data from references 2 and 3 and the additional data are presented in tables II and III.

Figures representing portions of the data included in tables II to VII are presented in the following order:

It should be noted that the variation of the effective downwash angle with angle of attack (fig. 15) was obtained from the pitching-moment curves for the complete model and the body-wing-vertical tail configuration presented in figure 13. The pitching-moment data for the body-wing configuration, taken from table II of reference 3, appears in figure 13 for comparison purposes.

The variation of the lateral stability coefficients (C_Y, C_n, and C_l) with sideslip angle β for the complete model with $i_V = 0$ were previously presented in reference 3; however, the additional data at intermediate positive angles of sideslip and at $\beta = -2^{\circ}$ resulted in slight changes in the fairings of these curves as presented in figures 19(d), 20(d), and 21(d), respectively. As a result of these fairing changes, the variations of C_{Y_β}, C_{n_β}, and C_{l_β} with angle of attack for the complete model included in figures 31, 32, and 33 are also slightly different from those presented in reference 3.

Langley Aeronautical Laboratory,
National Advisory Committee for Aeronautics,
Langley Field, Va., March 1, 1955.

APPENDIX

AXIS-TRANSFER EQUATIONS

The equations for transfer of force and moment coefficients from the body-axis system to the stability-axis system are as follows:

$$C_{Y_S} = C_{Y_B}$$

$$C_{l_S} = C_{l_B} \cos \alpha + C_{n_B} \sin \alpha$$

$$C_{n_S} = C_{n_B} \cos \alpha - C_{l_B} \sin \alpha$$

$$C_{m_S} = C_{m_B}$$

$$C_{L_S} = C_{N_B} \cos \alpha - C_{D_B} \sin \alpha$$

$$C_{D_S} = C_{D_B} \cos \alpha + C_{N_B} \sin \alpha$$

REFERENCES

1. McLellan, Charles H.: A Method for Increasing the Effectiveness of Stabilizing Surfaces at High Supersonic Mach Numbers. NACA RM L54F21, 1954.

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4. Dunning, Robert W., and Ulmann, Edward F.: Static Longitudinal and Lateral Stability Data From an Exploratory Investigation at Mach Number 4.06 of an Airplane Configuration Having a Wing of Trapezoidal Plan Form. NACA RM L55A21, 1955.

5. Dunning, Robert W., and Ulmann, Edward F.: Exploratory Investigation at Mach Number 4.06 of an Airplane Configuration Having a Wing of Trapezoidal Plan Form - Longitudinal and Lateral Control Characteristics. NACA RM L55B28, 1955.

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TABLE I.- GEOMETRIC CHARACTERISTICS OF MODEL

Wing:	
Area (including area submerged in fuselage), sq in.	6.24
Span, in.	4.33
Mean aerodynamic chord, in.	1.716
Root chord, in.	2.53
Tip chord, in.	0.354
Airfoil section	Hexagonal with round leading edge
Taper ratio	0.140
Aspect ratio	3.00
Sweep of leading edge, deg	38.83
Sweep of c/4 line, deg	29
Incidence at fuselage center line, deg	0
Dihedral, deg	0
Geometric twist, deg	0
Horizontal and vertical tails:	
Area (including area submerged in fuselage), sq in.	2.06
Span, in.	2.69
Mean aerodynamic chord, in.	0.853
Root chord, in.	1.214
Tip chord, in.	0.317
Airfoil section	5° semiangle wedge
Taper ratio	0.261
Aspect ratio	3.52
Sweep of leading edge, deg	22.63
Dihedral, deg	0
Fuselage:	
Length, in.	7.50
Maximum diameter, in.	0.790
Fineness ratio	9.50
Base diameter, in.	0.790
Distance from nose to moment reference	3.950
Ogive nose length, in.	2.29
Ogive radius, in.	6.85

TABLE II. - AERODYNAMIC CHARACTERISTICS OF THE COMPLETE MODEL AT M = 6.86; R = 343,000.

Stability-axis data

$i_V = 0$; $\beta = 0$

i_H, deg	α, deg	C_L	C_D	L/D
-20	- 5.17	-.1531	.0988	-1.55
-20	- 4.25	-.1302	.0880	-1.48
-20	- 2.17	-.0649	.0587	-1.106
-20	- .17	-.0155	.0443	- .3509
-20	- .08	-.0142	.0458	- .309
-20	1.92	.0048	.0525	.0916
-20	3.83	.0114	.0648	.1762
-20	4.92	.0228	.0698	.327
-20	5.92	.0592	.0677	.8738
-20	7.92	.1004	.0756	1.327
-20	10.08	.1374	.0889	1.54
-20	15.33	.2575	.1432	1.80
-20	20.83	.4078	.2405	1.70
-16	- 5.17	-.1370	.0871	-1.57
-16	- 4.17	-.1170	.0783	-1.50
-16	- 2.00	-.0562	.0564	- .997
-16	- .17	-.0116	.0448	- .260
-16	.08	-.0104	.0473	- .221
-16	2.00	.0113	.0518	.219
-16	4.25	.0271	.0598	.454
-16	5.08	.0497	.0632	.786
-16	6.00	.0729	.0629	1.16
-16	7.83	.1107	.0721	1.54
-16	10.08	.1552	.0887	1.75
-16	15.58	.2798	.1449	1.93
-16	20.67	.4410	.2434	1.81
-16	26.00	.6280	.3909	1.61
-12	- 5.08	-.1230	.0230	- 1.67
-12	- 4.17	-.1070	.0700	- 1.57
-12	- 2.00	-.0582	.0520	- 1.12
-12	.00	-.0132	.0432	- .31
-12	.00	-.0091	.0438	- .21
-12	2.00	.0115	.0487	.24
-12	3.92	.0359	.0536	.67
-12	5.00	.0619	.0562	1.10
-12	6.00	.0765	.0587	1.30
-12	10.08	.1638	.0832	1.97
-12	15.42	.2898	.1395	2.07
-12	26.17	.6389	.3896	1.64
-10	- 5.25	-.1227	.0729	- 1.68
-10	- 4.25	-.1024	.0644	- 1.59
-10	- 2.25	-.0542	.0496	- 1.09
-10	- .17	-.0112	.0459	- .24
-10	- .08	-.0102	.0422	- .24
-10	1.92	.0177	.0456	.39
-10	3.83	.0441	.0517	.85
-10	4.83	.0569	.0571	.99
-10	6.00	.0844	.0579	1.45
-10	8.17	.1259	.0691	1.82
-10	10.08	.1597	.0855	1.86
-10	15.67	.2936	.1438	2.04
-10	26.00	.6545	.3972	1.64
- 8	- 5.30	-.1164	.0701	-1.65
- 8	- 4.28	-.0968	.0660	-1.46
- 8	- 1.88	-.0529	.0547	- .96
- 8	- .18	-.0104	.0448	- .23
- 8	- .33	-.0128	.0469	- .27
- 8	1.87	.0222	.049	.45
- 8	3.75	.0492	.0544	.90
- 8	4.88	.0694	.0594	1.16
- 8	5.88	.0923	.0612	1.51
- 8	8.08	.1352	.0734	1.84
- 8	10.13	.1737	.0879	1.97
- 8	15.17	.3114	.1467	2.12
- 8	20.98	.4896	.2565	1.91
- 8	26.17	.6894	.4189	1.64
- 6	- 5.20	-.1056	.0675	-1.56
- 6	- .30	-.0050	.0474	- .11
- 6	4.87	.0759	.0614	1.23
- 6	10.30	.1862	.0925	2.01
- 6	15.35	.3213	.1532	2.09
- 6	20.87	.4996	.2610	1.91
- 6	26.37	.7057	.4337	1.62
- 4	- 5.13	-.102	.0655	-1.56
- 4	.03	-.0079	.0466	- .17
- 4	4.93	.0775	.0587	1.32
- 4	10.17	.1873	.0917	2.04
- 4	15.70	.3264	.1549	2.11
- 4	20.97	.5068	.2641	1.92
- 4	26.20	.7143	.4351	1.64
- 2	- .03	-.0051	.0408	- .13
- 2	4.85	.0838	.0531	1.58
- 2	10.35	.1935	.0866	2.23
- 2	15.67	.3377	.1530	2.21
- 2	20.78	.5235	.2634	1.99
- 2	26.33	.7271	.4398	1.65
0	- .03	.0078	.0374	.21
0	1.80	.0431	.0418	1.03
0	3.77	.0782	.0487	1.61
0	5.93	.1178	.0574	2.05
0	8.13	.1618	.0699	2.31
0	10.35	.2091	.0882	2.37
0	15.67	.3564	.1581	2.25
0	20.78	.5465	.2743	1.99
0	26.33	.7362	.4571	1.61
2	- 5.30	-.0866	.0595	-1.46
2	- .05	.0000	.0452	.00
2	4.85	.0950	.0615	1.54
2	10.03	.2096	.0985	2.13
2	15.47	.3508	.1652	2.12
2	20.65	.5427	.2838	1.91
2	26.13	.7544	.4678	1.61

TABLE III. - AERODYNAMIC CHARACTERISTICS OF THE COMPLETE

MODEL AT M = 6.86; R = 343,000.

Body-axis data

(a) $i_V = 0$

i_H deg.	α deg	β deg	C_N	C_m	C_l	C_n	C_Y
-20°	.05	.00	-.0075	.0180	.0007	.0001	-.0014
-20°	1.08	.00	.0025	.0234	-.0001	.0000	-.0020
-20°	2.27	.00	.0125	.0314	-.0009	.0000	.0000
-20°	3.10	.00	.0150	.0506	-.0009	.0000	-.0007
-20°	4.27	.00	.0201	.0705	-.0001	.0002	-.0016
-20°	6.07	.00	.0753	.0504	-.0010	.0001	-.0017
-20°	7.95	.00	.1200	.0442	-.0017	.0001	-.0019
-20°	10.00	.00	.1626	.0480	.0001	.0002	-.0018
-20°	15.10	.00	.2950	.0526	-.0010	.0003	-.0026
-20°	20.18	.00	.4697	.0475	-.0007	.0002	-.0037
-20°	25.17	.00	.6911	.0294	.0017	.0000	-.0059
-20°	.02	3.93	-.0122	.0275	-.0004	.0064	-.0347
-20°	1.03	3.93	-.0035	.0301	-.0010	.0063	-.0343
-20°	2.00	3.93	.0052	.0387	-.0018	.0062	-.0346
-20°	3.04	3.94	.0128	.0492	-.0027	.0053	-.0341
-20°	4.11	3.95	.0249	.0052	-.0037	.0045	-.0337
-20°	6.08	3.92	.0664	.0421	-.0018	.0059	-.0365
-20°	8.05	3.90	.1046	.0366	-.0016	.0060	-.0378
-20°	10.00	3.88	.1426	.0388	-.0017	.0064	-.0401
-20°	15.06	3.78	.2586	.0432	-.0019	.0080	-.0467
-20°	20.10	3.64	.4072	.0392	-.0007	.0106	-.0560
-20°	25.13	3.44	.5929	.0243	.0000	.0157	-.0700
-20°	- .03	7.88	-.0230	.0419	.0004	.0131	-.0803
-20°	1.13	7.88	-.0103	.0426	-.0003	.0129	-.0789
-20°	2.10	7.87	.0028	.0484	.0014	.0129	-.0789
-20°	3.16	7.88	.0143	.0559	.0013	.0125	-.0792
-20°	4.14	7.87	.0283	.0627	.0002	.0121	-.0797
-20°	6.09	7.84	.0726	.0509	.0025	.0138	-.0837
-20°	8.13	7.79	.1181	.0445	.0017	.0144	-.0872
-20°	10.22	7.72	.1652	.0415	.0016	.0161	-.0934
-20°	15.17	7.53	.3010	.0463	.0011	.0204	-.1088
-20°	20.30	7.27	.4756	.0407	.0013	.0256	-.1271
-20°	25.29	6.92	.6895	.0254	.0011	.0327	-.1488
-16°	.00	.00	-.0104	.0170	.0000	.0001	-.0005
-16°	.95	.00	.0025	.0204	-.0009	-.0001	-.0008
-16°	2.08	.00	.0143	.0258	.0000	.0000	-.0012
-16°	3.05	.00	.0204	.0384	-.0007	.0000	.0002
-16°	4.03	.00	.0303	.0526	-.0019	.0000	-.0014
-16°	5.97	.00	.0816	.0342	-.0016	.0001	-.0009
-16°	7.94	.00	.1242	.0293	-.0004	.0000	-.0015
-16°	9.92	.00	.1726	.0315	.0002	-.0002	-.0023
-16°	14.90	.00	.3008	.0296	.0006	.0001	-.0025
-16°	20.04	.00	.4753	.0169	.0021	.0001	-.0045
-16°	25.00	.00	.6978	.0090	.0011	.0000	-.0057
-16°	- .01	3.94	.0151	.0270	-.0003	.0068	-.0404
-16°	1.00	3.93	.0074	.0316	.0010	.0071	-.0393
-16°	2.05	3.94	.0079	.0335	.0018	.0065	-.0389
-16°	3.01	3.95	.0194	.0412	.0008	.0053	-.0383
-16°	4.06	3.95	.0324	.0475	-.0002	.0051	-.0393
-16°	5.96	3.92	.0798	.0334	.0011	.0066	-.0419
-16°	7.94	3.91	.1461	.0274	.0009	.0065	-.0439
-16°	9.92	3.88	.1706	.0280	.0012	.0070	-.0468
-16°	14.93	3.79	.3052	.0268	.0013	.0088	-.0535
-16°	20.04	3.65	.4825	.0135	.0021	.0119	-.0646
-16°	25.00	3.45	.7103	-.0113	.0028	.0182	-.0807
-16°	.07	7.89	-.0103	.0336	-.0001	.0125	-.0811
-16°	1.13	7.89	.0013	.0344	.0001	.0123	-.0796
-16°	2.10	7.88	.0178	.0376	-.0011	.0122	-.0802
-16°	3.13	7.89	.0320	.0409	-.0011	.0121	-.0807
-16°	4.17	7.88	.0476	.0458	-.0014	.0119	-.0812
-16°	6.11	7.84	.0924	.0348	.0009	.0135	-.0846
-16°	8.13	7.80	.1398	.0277	.0010	.0139	-.0880
-16°	10.13	7.74	.1869	.0240	.0000	.0158	-.0939
-16°	15.22	7.54	.3241	.0221	.0006	.0201	-.1090
-16°	20.28	7.27	.5019	.0096	.0008	.0255	-.1280
-16°	25.25	6.92	.7218	-.0131	.0014	.0327	-.1491
-12°	.00	.00	-.0026	.0161	-.0004	.0001	-.0003
-12°	1.07	.00	.0097	.0185	-.0012	.0001	.0003
-12°	2.03	.00	.0228	.0219	-.0022	-.0002	-.0010
-12°	3.03	.00	.0354	.0295	-.0015	-.0002	-.0014
-12°	4.10	.00	.0540	.0311	-.0027	-.0001	-.0012
-12°	6.00	.00	.1092	.0181	-.0021	.0001	-.0024
-12°	8.08	.00	.1373	.0154	-.0011	-.0001	-.0021
-12°	9.92	.00	.1840	.0152	-.0013	.0001	-.0029
-12°	15.10	.00	.3235	.0057	-.0007	.0001	-.0034
-12°	20.05	.00	.5037	-.0159	.0001	-.0001	-.0050
-12°	24.88	.00	.7257	-.0520	.0006	.0000	-.0069
-12°	- .03	3.94	-.0122	.0222	.0015	.0065	-.0391
-12°	1.08	3.94	.0026	.0229	.0006	.0066	-.0389
-12°	2.02	3.95	.0175	.0236	-.0003	.0060	-.0385
-12°	3.01	3.95	.0302	.0265	-.0012	.0052	-.0386
-12°	4.06	3.95	.0458	.0320	-.0024	.0051	-.0395
-12°	6.01	3.92	.0905	.0201	.0009	.0065	-.0416
-12°	8.02	3.91	.1351	.0136	.0011	.0062	-.0432
-12°	9.85	3.88	.1781	.0127	.0012	.0067	-.0462
-12°	15.09	3.78	.3168	.0038	.0003	.0086	-.0534
-12°	20.02	3.65	.4964	-.0170	.0010	.0118	-.0646
-12°	24.98	3.46	.7219	-.0513	.0040	.0179	-.0797
-12°	.07	7.89	-.0145	.0279	-.0024	.0123	-.0800
-12°	1.16	7.90	.0011	.0269	-.0015	.0118	-.0786
-12°	2.14	7.89	.0153	.0267	-.0015	.0118	-.0806
-12°	3.16	7.89	.0307	.0283	-.0016	.0117	-.0802
-12°	4.12	7.88	.0476	.0309	-.0008	.0121	-.0809
-12°	6.03	7.85	.0935	.0209	-.0006	.0130	-.0848
-12°	7.98	7.80	.1402	.0138	.0005	.0135	-.0880
-12°	10.07	7.75	.1872	.0086	-.0004	.0153	-.0935
-12°	15.12	7.55	.3291	-.0014	-.0008	.0197	-.1082
-12°	20.18	7.27	.5110	-.0219	.0004	.0252	-.1272
-12°	25.09	6.93	.7360	-.0524	.0021	.0326	-.1488
-10°	.00	.00	-.0049	.0145	.0007	.0000	-.0005
-10°	1.07	.00	.0062	.0170	-.0001	-.0002	.0005
-10°	2.05	.00	.0198	.0181	-.0010	.0002	.0002
-10°	3.02	.00	.0354	.0222	-.0021	-.0002	-.0002
-10°	4.08	.00	.0506	.0231	-.0022	-.0001	-.0011
-10°	6.07	.00	.0910	.0129	-.0035	.0000	-.0022
-10°	7.90	.00	.1352	.0083	.0011	.0001	-.0022
-10°	9.98	.00	.1783	.0080	.0002	.0001	-.0021
-10°	15.00	.00	.3224	-.0056	-.0011	-.0002	-.0037
-10°	19.90	.00	.5043	-.0323	.0010	-.0003	-.0059
-10°	25.00	.00	.7355	-.0741	.0014	-.0004	-.0079
-10°	.03	3.94	-.0090	.0199	-.0003	.0064	-.0386
-10°	.97	3.94	.0076	.0191	-.0005	.0065	-.0415
-10°	2.02	3.95	.0241	.0190	-.0006	.0058	-.0401
-10°	3.01	3.95	.0405	.0204	-.0017	.0051	-.0387
-10°	4.01	3.94	.0574	.0222	-.0009	.0059	-.0406
-10°	6.06	3.93	.0987	.0124	-.0004	.0063	-.0423
-10°	8.02	3.91	.1443	.0073	-.0003	.0061	-.0439
-10°	9.89	3.88	.1898	.0048	.0007	.0067	-.0462
-10°	14.86	3.79	.3341	-.0085	.0014	.0087	-.0544
-10°	19.82	3.65	.5189	-.0352	.0017	.0118	-.0654
-10°	24.82	3.45	.7490	-.0748	.0033	.0179	-.0801
- 8°	- .02	.00	-.0026	.0146	-.0004	.0001	-.0013
- 8°	1.10	.00	.0110	.0137	-.0012	-.0001	-.0003
- 8°	2.02	.00	.0283	.0134	-.0005	-.0001	-.0005
- 8°	2.97	.00	.0418	.0161	-.0014	-.0001	-.0009
- 8°	3.92	.00	.0592	.0171	-.0017	.0001	-.0031
- 8°	5.95	.00	.1011	.0075	-.0029	.0000	-.0017
- 8°	7.98	.00	.1434	.0021	-.0018	.0001	-.0023
- 8°	9.98	.00	.1888	.0005	-.0010	.0001	-.0030
- 8°	14.97	.00	.3337	-.0167	-.0021	.0001	-.0040
- 8°	19.88	.00	.5210	-.0495	.0001	.0000	-.0055
- 8°	24.80	.00	.7518	-.0960	.0019	.0001	-.0077
- 8°	- .08	3.94	-.0092	.0170	-.0012	.0062	-.0384
- 8°	.97	3.94	.0088	.0151	-.0013	.0064	-.0395
- 8°	1.97	3.95	.0258	.0141	-.0004	.0059	-.0385
- 8°	2.98	3.95	.0412	.0153	-.0015	.0053	-.0387
- 8°	3.96	3.94	.0581	.0149	-.0025	.0060	-.0401
- 8°	5.84	3.92	.1000	.0074	-.0020	.0064	-.0415
- 8°	7.79	3.91	.1437	.0009	-.0008	.0061	-.0432
- 8°	9.92	3.88	.1926	-.0029	-.0009	.0067	-.0458
- 8°	14.85	3.79	.3375	-.0199	.0001	.0086	-.0530
- 8°	19.89	3.65	.5276	-.0519	.0015	.0119	-.0643
- 8°	24.77	3.46	.7608	-.0980	.0037	.0179	-.0797
- 8°	.07	7.90	-.0089	.0183	.0004	.0115	-.0785
- 8°	1.04	7.90	.0078	.0158	.0003	.0117	-.0794
- 8°	2.05	7.89	.0257	.0143	.0002	.0116	-.0797
- 8°	3.13	7.89	.0412	.0151	-.0008	.0120	-.0812
- 8°	4.14	7.87	.0611	.0125	.0008	.0125	-.0821
- 8°	5.99	7.85	.1028	.0066	.0012	.0128	-.0844
- 8°	8.10	7.80	.1500	-.0007	.0022	.0134	-.0875
- 8°	10.03	7.74	.1989	-.0086	.0013	.0154	-.0936
- 8°	15.11	7.55	.3470	-.0256	.0019	.0198	-.1084
- 8°	20.05	7.28	.5340	-.0560	.0032	.0253	-.1268
- 8°	25.06	6.95	.7613	-.0963	.0049	.0325	-.1479

TABLE III. - AERODYNAMIC CHARACTERISTICS OF THE COMPLETE

MODEL AT M = 6.86; R = 343,000. - Continued

Body-axis data

(a) $i_V = 0$

i_H deg.	α deg	β deg	C_N	C_m	C_l	C_n	C_Y
- 6°	- .02	.00	-.0001	.0105	-.0004	.0001	.0000
- 6°	1.07	.00	.0163	.0095	-.0005	.0001	-.0010
- 6°	2.15	.00	.0324	.0086	-.0014	.0001	-.0013
- 6°	3.03	.00	.0508	.0084	-.0025	.0001	-.0012
- 6°	4.20	.00	.0681	.0094	-.0028	.0001	-.0015
- 6°	5.93	.00	.1106	.0006	-.0024	.0001	-.0015
- 6°	7.83	.00	.1545	-.0059	-.0022	.0002	-.0028
- 6°	9.82	.00	.1979	-.0084	-.0003	.0002	-.0024
- 6°	14.75	.00	.3472	-.0307	-.0016	.0000	-.0036
- 6°	19.72	.00	.5389	-.0689	.0004	.0000	-.0062
- 6°	24.70	.00	.7735	-.1216	.0020	-.0001	-.0082
- 6°	.03	3.95	-.0041	.0122	-.0014	.0062	-.0398
- 6°	.95	3.95	.0127	.0098	-.0014	.0062	-.0395
- 6°	2.00	3.95	.0283	.0088	-.0005	.0057	-.0404
- 6°	3.01	3.95	.0451	.0080	-.0015	.0053	-.0403
- 6°	4.04	3.94	.0620	.0070	-.0025	.0058	-.0408
- 6°	5.98	3.93	.1041	.0000	-.0030	.0064	-.0425
- 6°	8.02	3.91	.1482	-.0066	-.0017	.0061	-.0433
- 6°	9.89	3.89	.1966	-.0124	-.0008	.0065	-.0455
- 6°	14.86	3.80	.3433	-.0321	-.0009	.0086	-.0545
- 6°	19.82	3.65	.5310	-.0711	.0009	.0117	-.0653
- 6°	24.82	3.46	.7651	-.1228	.0052	.0177	-.0795
- 4°	- .02	.00	-.0025	.0076	-.0001	.0001	.0010
- 4°	.95	.00	.0124	.0048	-.0009	.0002	-.0006
- 4°	1.98	.00	.0311	.0032	-.0020	.0002	.0002
- 4°	2.90	.00	.0496	.0026	-.0032	.0001	-.0015
- 4°	4.03	.00	.0661	.0021	-.0014	.0002	-.0006
- 4°	6.02	.00	.1071	-.0056	-.0028	.0002	-.0012
- 4°	7.83	.00	.1504	-.0130	-.0043	.0002	-.0021
- 4°	9.87	.00	.1979	-.0182	-.0017	.0002	-.0026
- 4°	14.75	.00	.3469	-.0439	-.0019	.0001	-.0033
- 4°	19.82	.00	.5396	-.0885	-.0006	.0001	-.0047
- 4°	24.72	.00	.7721	-.1463	.0014	.0001	-.0066
- 4°	- .02	3.95	-.0024	.0089	.0006	.0057	-.0353
- 4°	1.08	3.95	.0140	.0056	-.0004	.0060	-.0390
- 4°	1.98	3.95	.0330	.0030	-.0015	.0062	-.0399
- 4°	2.93	3.94	.0495	.0020	-.0025	.0057	-.0400
- 4°	4.01	3.94	.0685	.0009	-.0018	.0055	-.0398
- 4°	5.94	3.93	.1069	-.0058	-.0003	.0059	-.0405
- 4°	7.97	3.91	.1534	-.0135	-.0001	.0063	-.0421
- 4°	9.89	3.89	.2000	-.0202	.0000	.0061	-.0433
- 4°	14.91	3.81	.3515	-.0475	.0007	.0066	-.0474
- 4°	19.86	3.68	.5425	-.0911	.0014	.0088	-.0560
- 4°	24.72	3.52	.7802	-.1500	.0051	.0121	-.0678
- 4°	.00	7.90	-.0025	.0081	.0002	.0114	-.0789
- 4°	.93	7.90	.0150	.0052	-.0007	.0117	-.0793
- 4°	2.02	7.90	.0340	.0021	-.0009	.0119	-.0813
- 4°	3.05	7.88	.0540	.0000	-.0012	.0121	-.0818
- 4°	4.04	7.87	.0713	-.0015	-.0023	.0126	-.0825
- 4°	6.01	7.85	.1142	-.0073	-.0020	.0129	-.0839
- 4°	8.10	7.80	.0976	-.0128	.0037	.0136	-.0863
- 4°	9.97	7.74	.2146	-.0274	.0005	.0155	-.0934
- 4°	14.86	7.55	.3666	-.0537	.0008	.0199	-.1081
- 4°	19.91	7.31	.5625	-.0952	-.0023	.0258	-.1283
- 4°	24.90	6.93	.7985	-.1478	.0054	.0330	-.1489
- 2°	.00	.00	.0000	.0030	-.0001	.0003	-.0010
- 2°	1.00	.00	.0189	-.0006	-.0011	.0001	-.0005
- 2°	1.98	.00	.0380	-.0036	-.0004	.0000	.0000
- 2°	2.97	.00	.0569	-.0052	-.0014	.0000	.0008
- 2°	4.02	.00	.0733	-.0062	-.0016	.0001	-.0008
- 2°	5.92	.00	.1140	-.0141	-.0029	.0001	-.0016
- 2°	7.87	.00	.1591	-.0226	-.0026	.0003	-.0023
- 2°	9.75	.00	.2100	-.0296	-.0018	.0002	-.0031
- 2°	14.67	.00	.3591	-.0601	-.0017	.0001	-.0037
- 2°	19.65	.00	.5558	-.1110	-.0002	.0001	-.0048
- 2°	24.57	.00	.7906	-.1751	.0031	.0001	-.0077
- 2°	- .01	3.95	-.0015	.0050	-.0011	.0060	-.0362
- 2°	1.05	3.95	.0164	.0014	-.0012	.0060	-.0374
- 2°	1.88	3.95	.0343	-.0022	-.0022	.0058	-.0380
- 2°	2.94	3.94	.0524	-.0043	-.0033	.0055	-.0386
- 2°	4.01	3.94	.0694	-.0052	-.0034	.0058	-.0406
- 2°	5.76	3.93	.1101	-.0117	-.0020	.0063	-.0419
- 2°	7.84	3.91	.1580	-.0190	-.0029	.0060	-.0434
- 2°	9.90	3.89	.2051	-.0298	-.0027	.0065	-.0462
- 2°	14.80	3.80	.3592	-.0615	-.0028	.0085	-.0535
- 2°	19.91	3.65	.5550	-.1112	.0006	.0116	-.0644
- 2°	24.58	3.47	.7990	-.1748	.0045	.0177	-.0798

i_H deg.	α deg	β deg	C_N	C_m	C_l	C_n	C_Y
- 2°	.00	7.91	.0012	.0035	-.0007	.0111	-.0791
- 2°	.94	7.90	.0205	-.0006	-.0018	.0116	-.0806
- 2°	2.02	7.90	.0388	-.0037	-.0019	.0117	-.0808
- 2°	2.96	7.89	.0572	-.0063	-.0020	.0120	-.0820
- 2°	3.96	7.87	.0785	-.0090	-.0023	.0125	-.0835
- 2°	5.96	7.85	.1204	-.0156	.0001	.0131	-.0850
- 2°	7.96	7.80	.1675	-.0251	-.0015	.0139	-.0892
- 2°	9.94	7.74	.2215	-.0381	-.0006	.0163	-.0948
- 2°	14.86	7.56	.3757	-.0682	.0002	.0201	-.1100
- 2°	19.91	7.29	.5754	-.1156	.0026	.0259	-.1279
- 2°	24.90	6.95	.8136	-.1733	.0048	.0329	-.1502
0°	- .02	.00	.0027	-.0002	.0008	.0002	.0007
0°	.96	.00	.0065	-.0047	.0007	.0003	.0000
0°	1.90	.00	.0405	-.0088	.0005	.0002	-.0009
0°	2.83	.00	.0593	-.0114	.0012	.0000	-.0018
0°	3.88	.00	.0781	-.0134	.0011	.0001	-.0015
0°	5.93	.00	.1168	-.0206	-.0002	.0002	-.0023
0°	7.87	.00	.1633	-.0312	.0001	.0002	-.0024
0°	9.85	.00	.2135	-.0394	.0018	.0003	-.0028
0°	14.78	.00	.3679	-.0754	.0026	.0002	-.0038
0°	19.75	.00	.5735	-.1311	.0033	-.0008	-.0032
0°	24.68	.00	.7657	-.2021	.0066	-.0011	-.0066
0°	- 5.18	3.93	-.0936	.0166	.0013	.0060	-.0395
0°	- 2.18	3.95	-.0394	.0101	.0025	.0056	-.0372
0°	- .08	3.95	-.0003	.0015	.0018	.0055	-.0371
0°	2.00	3.95	.0371	-.0073	.0009	.0055	-.0360
0°	3.76	3.95	.0754	-.0129	.0000	.0052	-.0373
0°	5.76	3.93	.1141	-.0187	.0000	.0059	-.0389
0°	7.60	3.93	.1589	-.0289	-.0007	.0056	-.0396
0°	9.69	3.90	.2085	-.0397	-.0013	.0056	-.0413
0°	14.45	3.81	.3577	-.0746	-.0021	.0079	-.0491
0°	19.21	3.69	.5513	-.1307	-.0042	.0106	-.0562
0°	24.30	3.51	.7855	-.2004	-.0056	.0163	-.0692
0°	- 5.05	7.86	-.0927	.0188	.0008	.0125	-.0801
0°	- 2.02	7.90	-.0354	.0093	-.0004	.0114	-.0769
0°	.00	7.91	.0050	.0007	-.0007	.0109	-.0776
0°	1.94	7.90	.0435	-.0085	-.0017	.0117	-.0790
0°	3.71	7.89	.0807	-.0156	.0002	.0124	-.0810
0°	5.98	7.85	.1250	-.0223	-.0002	.0133	-.0833
0°	7.74	7.82	.1705	-.0325	.0014	.0138	-.0861
0°	9.51	7.76	.2246	-.0472	.0007	.0155	-.0917
0°	14.88	7.57	.3749	-.0814	.0009	.0198	-.1064
0°	19.75	7.33	.5699	-.1331	.0051	.0254	-.1243
0°	24.62	7.02	.8053	-.1938	.0094	.0318	-.1435
2°	.05	.00	.0050	-.0054	-.0010	-.0001	-.0002
2°	.98	.00	.0226	-.0098	-.0020	.0001	-.0006
2°	1.97	.00	.0437	-.0156	.0033	.0000	-.0006
2°	2.90	.00	.0619	-.0195	-.0013	.0001	-.0015
2°	3.93	.00	.0821	-.0222	-.0016	.0001	-.0016
2°	5.85	.00	.1229	-.0306	-.0028	.0001	-.0018
2°	7.83	.00	.1712	-.0425	-.0008	.0002	-.0023
2°	9.75	.00	.2218	-.0529	.0001	.0003	-.0028
2°	14.62	.00	.3771	-.0931	-.0007	.0001	-.0033
2°	19.57	.00	.5804	-.1559	.0018	.0003	-.0055
2°	24.37	.00	.8213	-.2311	.0060	.0001	-.0072
2°	.03	3.95	.0060	-.0051	-.0023	.0060	-.0403
2°	.97	3.94	.0248	-.0101	-.0032	.0062	-.0390
2°	1.97	3.95	.0462	-.0158	-.0034	.0060	-.0383
2°	2.94	3.94	.0663	-.0199	-.0037	.0054	-.0390
2°	3.94	3.94	.0852	-.0220	-.0039	.0058	-.0403
2°	5.88	3.92	.1275	-.0289	-.0026	.0067	-.0425
2°	7.84	3.91	.1749	-.0402	-.0024	.0063	-.0434
2°	9.87	3.88	.2270	-.0526	-.0025	.0066	-.0458
2°	14.75	3.79	.3922	-.0969	-.0012	.0089	-.0538
2°	19.66	3.66	.5946	-.1582	.0009	.0120	-.0649
2°	24.47	3.46	.8404	-.2340	.0080	.0179	-.0800
2°	- .07	7.90	.0098	-.0059	-.0018	.0111	-.0767
2°	.91	7.90	.0287	-.0110	-.0019	.0113	-.0775
2°	2.07	7.89	.0493	-.0167	-.0011	.0117	-.0785
2°	2.93	7.89	.0684	-.0208	-.0022	.0120	-.0794
2°	3.97	7.87	.0877	-.0244	-.0014	.0125	-.0807
2°	5.86	7.84	.1282	-.0318	.0000	.0134	-.0829
2°	7.92	7.79	.2029	-.0515	-.0002	.0147	-.0883
2°	9.98	7.74	.2313	-.0589	.0011	.0158	-.0920
2°	14.79	7.55	.3858	-.0985	.0021	.0201	-.1066
2°	19.83	7.29	.5834	-.1551	.0057	.0257	-.1244
2°	24.68	7.00	.8202	-.2166	.0138	.0297	-.1399

TABLE III - AERODYNAMIC CHARACTERISTICS OF THE COMPLETE

MODEL AT M = 6.86; R = 343,000 - Continued

Body-axis data

(b) $i_H = 0$

i_V deg.	α deg	β deg	C_N	C_m	C_l	C_n	C_Y
-6	-4.67	-2.11	-.0933	.0168	-.0026	.0090	.0034
-6	-2.00	-2.10	-.0375	.0107	-.0031	.0080	.0024
-6	-.33	-2.11	.0009	.0010	-.0023	.0085	.0035
-6	1.92	-2.10	.0403	-.0090	.0006	.0082	.0032
-6	3.75	-2.10	.0768	-.0142	.0003	.0086	.0027
-6	5.59	-2.10	.1188	-.0203	.0001	.0092	.0027
-6	7.76	-2.10	.1630	-.0302	.0018	.0098	.0032
-6	9.59	-2.09	.2139	-.0398	.0040	.0102	.0026
-6	14.68	-2.06	.3656	-.0754	.0044	.0106	.0041
-6	19.51	-2.01	.5607	-.1324	.0068	.0108	.0052
-6	24.27	-1.94	.8021	-.2046	.0102	.0108	.0060
-6	-.05	.00	.0035	.0001	-.0012	.0103	-.0160
-6	.87	.00	.0221	.0046	-.0022	.0102	-.0165
-6	1.97	.00	.0409	.0086	-.0023	.0103	-.0169
-6	2.90	.00	.0601	.0122	-.0024	.0104	-.0173
-6	3.88	.00	.0799	.0140	-.0008	.0108	-.0176
-6	5.77	.00	.1190	.0213	.0008	.0116	-.0181
-6	7.82	.00	.1666	.0322	.0020	.0125	-.0198
-6	9.77	.00	.2115	.0403	.0013	.0132	-.0209
-6	14.68	.00	.3668	.0760	.0024	.0145	-.0238
-6	19.55	.00	.5672	.1330	.0051	.0159	-.027
-6	24.50	.00	.8108	-.2022	.0112	.0173	-.0311
-6	-5.17	.85	-.0957	.0178	.0001	.0134	-.057
-6	-2.08	.87	-.0392	.0110	-.0012	.0120	-.0241
-6	-.17	.88	-.0001	.0007	-.0003	.0118	-.0252
-6	1.92	.88	.0378	-.0094	.0008	.0120	-.0253
-6	3.83	.87	.0765	-.0149	.0008	.0125	-.0263
-6	5.83	.85	.1162	-.0212	.0017	.0137	-.0281
-6	7.83	.84	.1627	-.0314	.0013	.0145	-.0300
-6	9.83	.83	.2111	-.0405	.0037	.0151	-.0304
-6	14.67	.80	.3621	-.0747	.0049	.0166	-.0344
-6	19.58	.76	.5632	-.1335	.0073	.0189	-.0395
-6	24.42	.71	.8070	-.2061	.0119	.0217	-.0454
-6	-4.87	1.82	-.0854	.0177	-.0015	.0149	-.0383
-6	-2.13	1.85	-.0342	.0113	-.0017	.0138	-.0380
-6	-.05	1.86	.0044	.0012	-.0029	.0127	-.0389
-6	2.00	1.85	.0420	-.0085	-.0009	.0138	-.0346
-6	3.93	1.83	.0803	-.0140	-.0002	.0143	-.0362
-6	5.90	1.83	.1192	-.0195	-.0004	.0151	-.0372
-6	7.83	1.82	.1658	-.0299	.0020	.0154	-.0388
-6	9.73	1.81	.2169	-.0392	.0022	.0157	-.0398
-6	14.83	1.75	.3660	-.0746	.0041	.0181	-.0499
-6	19.59	1.68	.5659	-.1322	.0079	.0207	-.0536
-6	24.44	1.58	.8089	-.2052	.0135	.0242	-.0620
-6	-5.01	2.79	-.0932	.0174	-.0012	.0175	-.0436
-6	-1.92	2.81	-.0373	.0108	-.0015	.0170	-.0417
-6	.00	2.82	.0024	.0006	-.0008	.0164	-.0427
-6	1.92	2.81	.0402	.0094	-.0009	.0171	-.0438
-6	3.92	2.80	.0793	-.0150	-.0001	.0176	-.0450
-6	5.68	2.80	.1207	-.0207	.0024	.0177	-.0458
-6	7.59	2.80	.1667	-.0313	.0031	.0177	-.0464
-6	9.84	2.77	.2175	-.0413	.0034	.0183	-.0481
-6	14.77	2.69	.3711	-.0769	.0063	.0209	-.0556
-6	19.77	2.59	.5696	-.1347	.0092	.0241	-.0648
-6	24.52	2.46	.8148	-.2076	.0150	.0292	-.0756
-6	.00	3.78	.0024	.0001	-.0005	.0196	-.0601
-6	.93	3.78	.0233	-.0051	-.0017	.0198	-.0625
-6	1.93	3.79	.0434	-.0092	-.0018	.0195	-.0612
-6	2.93	3.78	.0627	-.0129	-.0020	.0191	-.0612
-6	3.94	3.78	.0798	-.0150	-.0020	.0195	-.0620
-6	5.96	3.76	.1225	-.0220	-.0035	.0204	-.0640
-6	7.80	3.75	.1707	-.0331	-.0014	.0203	-.0658
-6	9.85	3.72	.2230	-.0443	-.0006	.0208	-.0686
-6	14.73	3.61	.3831	-.0824	-.0075	.0246	-.0802
-6	19.66	3.46	.5896	-.1417	-.0072	.0294	-.0927
-6	24.62	3.31	.8316	-.2053	-.0044	.0316	-.1070
-6	.05	7.71	.0049	-.0013	-.0018	.0280	-.1058
-6	1.01	7.71	.0243	-.0059	-.0019	.0280	-.1062
-6	1.99	7.71	.0450	-.0111	-.0021	.0283	-.1067
-6	2.95	7.70	.0648	-.0149	-.0013	.0284	-.1073
-6	4.01	7.68	.0848	-.0186	.0004	.0295	-.1087
-6	5.89	7.66	.1284	-.0262	.0017	.0297	-.1102
-6	7.96	7.61	.1771	-.0373	.0018	.0310	-.1153
-6	9.87	7.54	.2312	-.0527	.0027	.0333	-.1218
-6	14.91	7.33	.3947	-.0901	.0049	.0391	-.1377
-6	19.93	7.05	.5999	-.1426	.0098	.0464	-.1578
-4	-4.88	-2.06	-.0965	.0172	-.0017	.0051	.0066
-4	-2.25	-2.06	-.0413	.0115	-.0021	.0043	.0070
-4	-.25	-2.06	-.0015	.0017	-.0014	.0050	.0049
-4	1.75	-2.06	.0378	-.0084	-.0015	.0045	.0059
-4	3.83	-2.06	.0745	-.0136	-.0006	.0047	.0055
-4	5.68	-2.05	.1158	-.0198	.0001	.0050	.0056
-4	7.92	-2.05	.1633	-.0299	.0017	.0056	.0051
-4	9.84	-2.04	.2125	-.0387	.0022	.0058	.0054
-4	14.68	-2.00	.3624	-.0744	.0037	.0055	.0074
-4	19.76	1.95	.5616	-.1312	.0070	.0052	.0085
-4	24.43	1.87	.8007	-.2040	.0088	.0045	.0114
-4	-.08	.00	.0000	-.0001	-.0001	.0067	-.0119
-4	.88	.00	.0162	-.0045	.0000	.0068	-.0110
-4	1.80	.00	.0340	-.0085	-.0001	.0068	-.0123
-4	2.83	.00	.0543	-.0117	-.0003	.0068	-.0118
-4	3.88	.00	.0740	-.0133	-.0005	.0071	-.0122
-4	5.88	.00	.1126	-.0208	.0021	.0077	-.0130
-4	7.83	.00	.1620	-.0319	.0024	.0083	-.0139
-4	9.82	.00	.2062	-.0397	.0019	.0087	-.0147
-4	16.27	.00	.3615	-.0746	.0031	.0097	-.0173
-4	19.67	.00	.5609	-.1304	.0062	.0107	-.0202
-4	24.48	.00	.8025	-.1999	.0090	.0117	-.0238
-4	-5.00	.89	-.0933	.0167	.0001	.0093	-.0205
-4	-2.08	.91	-.0389	.0104	-.0002	.0082	-.0184
-4	-.17	.91	-.0001	.0010	.0006	.0080	-.0191
-4	1.83	.91	.0389	-.0083	.0025	.0082	-.0191
-4	3.67	.91	.0770	-.0149	.0015	.0086	-.0201
-4	5.67	.89	.1172	-.0206	.0023	.0094	-.0215
-4	7.83	.89	.1636	-.0317	.0029	.0099	-.0228
-4	9.83	.88	.2143	-.0401	.0043	.0106	-.0240
-4	14.67	.85	.3645	-.0751	.0057	.0115	-.0266
-4	19.58	.82	.5616	-.1320	.0093	.0130	-.0316
-4	24.33	.77	.8044	-.2046	.0131	.0152	-.0369
-4	-4.97	1.87	-.0892	.0178	-.0005	.0109	-.0298
-4	-2.02	1.89	-.0366	.0110	-.0006	.0101	-.0282
-4	.03	1.90	.0037	.0010	-.0008	.0091	-.0285
-4	1.87	1.89	.0424	-.0091	.0002	.0100	-.0283
-4	3.92	1.89	.0806	-.0138	.0000	.0104	-.0300
-4	5.92	1.88	.1208	-.0200	.0008	.0109	-.0318
-4	7.78	1.87	.1654	-.0306	.0015	.0111	-.0327
-4	9.73	1.86	.2173	-.0394	.0027	.0112	-.0336
-4	14.83	1.81	.3658	-.0740	.0040	.0132	-.0396
-4	19.59	1.74	.5600	-.1309	.0066	.0154	-.0463
-4	24.44	1.66	.8011	-.2030	.0111	.0182	-.0556
-4	-4.76	2.86	-.0949	.0167	-.0002	.0120	-.0360
-4	-2.08	2.88	-.0386	.0101	-.0006	.0116	-.0373
-4	-.08	2.88	.0024	.0007	-.0009	.0114	-.0367
-4	1.92	2.87	.0419	-.0098	.0000	.0120	-.0371
-4	4.00	2.87	.0800	-.0150	.0008	.0122	-.0381

TABLE III - AERODYNAMIC CHARACTERISTICS OF THE COMPLETE

MODEL AT M = 6.86; R = 343,000 - Continued

Body-axis data

(b) $i_H = 0$

i_V deg.	α deg.	β deg.	C_N	C_m	C_l	C_n	C_Y
-4	6.01	2.85	.1197	-.0202	.0006	.0124	-.0392
-4	7.84	2.85	.1671	-.0313	.0021	.0123	-.0405
-4	9.84	2.83	.2156	-.0413	.0035	.0127	-.0416
-4	14.69	2.76	.3682	-.0760	.0055	.0150	-.0479
-4	19.60	2.66	.5670	-.1339	.0076	.0176	-.0560
-4	24.52	2.53	.8109	-.2068	.0135	.0221	-.0678
-4	- .02	3.84	.0012	.0002	-.0004	.0147	-.0532
-4	.92	3.84	.0188	-.0042	-.0004	.0150	-.0539
-4	1.88	3.84	.0381	-.0088	.0004	.0148	-.0540
-4	2.86	3.85	.0574	-.0126	-.0007	.0142	-.0530
-4	3.84	3.84	.0772	-.0137	-.0009	.0147	-.0544
-4	5.93	3.82	.1170	-.0212	-.0003	.0154	-.0568
-4	7.84	3.81	.1660	-.0319	.0009	.0152	-.0581
-4	9.82	3.78	.2197	-.0429	.0015	.0158	-.0605
-4	14.70	3.67	.3780	-.0810	.0028	.0189	-.0701
-4	19.64	3.53	.5869	-.1385	.0048	.0233	-.0834
-4	24.48	3.32	.8344	-.2087	.0127	.0307	-.0996
-4	- .02	7.78	.0024	-.0009	-.0007	.0218	-.0966
-4	1.08	7.78	.0241	-.0057	-.0009	.0223	-.0969
-4	2.04	7.77	.0431	-.0107	-.0010	.0224	-.0971
-4	3.05	7.76	.0636	-.0139	-.0004	.0228	-.0979
-4	4.01	7.75	.0830	-.0176	.0013	.0231	-.0993
-4	6.03	7.72	.1270	-.0256	.0025	.0240	-.1015
-4	7.93	7.67	.1730	-.0357	.0008	.0246	-.1061
-4	9.93	7.61	.2308	-.0504	.0023	.0270	-.1116
-4	14.89	7.40	.3915	-.0881	.0034	.0322	-.1295
-4	19.93	7.12	.5971	-.1432	.0089	.0398	-.1501
-2	- 5.98	-2.01	-.0924	.0171	-.0019	.0011	.0141
-2	- 1.95	-2.02	-.0383	.0110	-.0023	.0007	.0117
-2	- .13	-2.02	.0010	.0019	-.0015	.0014	.0107
-2	1.87	-2.02	.0411	-.0088	-.0016	.0008	.0118
-2	3.92	-2.02	.0773	-.0136	-.0007	.0009	.0114
-2	5.82	-2.01	.1179	-.0194	-.0008	.0012	.0116
-2	7.87	-2.00	.1634	-.0292	-.0001	.0016	.0117
-2	9.73	-2.00	.2142	-.0388	.0012	.0017	.0124
-2	14.76	-1.95	.3634	-.0742	.0017	.0010	.0152
-2	19.59	-1.90	.5637	-.1313	.0051	.0002	.0181
-2	24.41	-1.82	.8034	-.2042	.0079	-.0012	.0220
-2	- .10	.00	-.0014	-.0003	-.0008	.0035	-.0052
-2	1.00	.00	.0158	-.0041	-.0018	.0035	-.0066
-2	1.93	.00	.0321	-.0080	-.0017	.0035	-.0059
-2	2.98	.00	.0523	-.0107	-.0020	.0036	-.0069
-2	4.00	.00	.0689	-.0131	-.0029	.0037	-.0074
-2	5.83	.00	.1105	-.0207	-.0025	.0040	-.0080
-2	8.15	.00	.1611	-.0314	.0004	.0044	-.0090
-2	9.75	.00	.2053	-.0390	-.0011	.0046	-.0095
-2	14.73	.00	.3566	-.0737	.0002	.0050	-.0107
-2	19.57	.00	.5528	-.1292	.0033	.0057	-.0129
-2	24.40	.00	.7981	-.1982	.0061	.0062	-.0158
-2	- 4.92	.93	-.0926	.0172	.0000	.0056	-.0157
-2	- 2.08	.95	-.0372	.0106	.0007	.0049	-.0135
-2	.08	.95	.0001	.0012	.0006	.0047	-.0142
-2	1.67	.95	.0381	-.0088	.0015	.0049	-.0142
-2	3.92	.95	.0767	-.0143	.0014	.0050	-.0150
-2	5.83	.93	.1168	-.0206	.0012	.0057	-.0166
-2	7.75	.93	.1646	-.0312	.0018	.0059	-.0175
-2	9.83	.93	.2133	-.0390	.0032	.0060	-.0176
-2	14.58	.90	.3622	-.0739	.0055	.0068	-.0207
-2	19.33	.87	.5571	-.1310	.0069	.0080	-.0240
-2	24.33	.82	.7995	-.2032	.0102	.0097	-.0289
-2	- 4.97	1.93	-.0891	.0164	-.0016	.0073	-.0236
-2	- 2.08	1.93	-.0371	.0090	-.0015	.0068	-.0230
-2	.03	1.94	.0024	-.0006	-.0016	.0061	-.0222
-2	1.97	1.93	.0412	-.0102	-.0016	.0068	-.0240
-2	3.82	1.93	.0805	-.0155	-.0008	.0070	-.0253
-2	5.93	1.92	.1207	-.0203	-.0010	.0073	-.0260
-2	7.76	1.91	.1650	-.0308	-.0003	.0072	-.0266
-2	9.78	1.90	.2143	-.0399	.0000	.0073	-.0274
-2	14.83	1.86	.3646	-.0751	-.0012	.0088	-.0324
-2	19.73	1.79	.5599	-.1317	-.0045	.0105	-.0382
-2	24.44	1.71	.7993	-.2034	-.0078	.0127	-.0453
-2	- 5.01	2.91	-.0946	.0162	.0007	.0062	-.0310
-2	- 1.92	2.92	-.0404	.0100	-.0006	.0080	-.0321
-2	- .08	2.92	-.0003	.0000	-.0017	.0078	-.0320
-2	1.83	2.92	.0387	-.0097	-.0008	.0081	-.0330
-2	3.92	2.91	.0763	-.0146	.0001	.0082	-.0330
-2	5.93	2.91	.1167	-.0199	-.0001	.0082	-.0340
-2	7.93	2.89	.1662	-.0312	.0003	.0082	-.0351
-2	9.88	2.88	.2146	-.0403	.0018	.0084	-.0357
-2	14.69	2.81	.3676	-.0757	.0038	.0102	-.0415
-2	19.69	2.71	.5647	-.1330	.0060	.0125	-.0492
-2	24.28	2.59	.8091	-.2060	.0111	.0162	-.0590
-2	.90	3.89	.0201	-.0046	-.0014	.0107	-.0484
-2	2.02	3.89	.0393	-.0087	-.0015	.0106	-.0475
-2	2.98	3.89	.0588	-.0119	-.0017	.0100	-.0478
-2	3.93	3.89	.0787	-.0131	-.0019	.0104	-.0485
-2	5.84	3.87	.1196	-.0206	-.0004	.0112	-.0502
-2	7.82	3.85	.1701	-.0313	.0006	.0110	-.0512
-2	9.80	3.83	.2217	-.0420	.0006	.0113	-.0535
-2	14.85	3.73	.3816	-.0795	.0013	.0142	-.0630
-2	19.69	3.59	.5865	-.1364	.0025	.0178	-.0749
-2	24.50	3.38	.8375	-.2072	.0094	.0253	-.0926
-2	.03	7.85	.0037	-.0003	-.0008	.0161	-.0877
-2	1.01	7.85	.0230	-.0054	-.0009	.0163	-.0880
-2	2.07	7.83	.0447	-.0097	-.0012	.0167	-.0899
-2	3.05	7.83	.0641	-.0129	-.0013	.0170	-.0902
-2	4.04	7.82	.0838	-.0166	-.0015	.0173	-.0923
-2	6.06	7.79	.1249	-.0240	.0009	.0184	-.0947
-2	7.91	7.79	.1752	-.0347	.0018	.0193	-.0981
-2	9.93	7.68	.2293	-.0361	.0008	.0213	-.1056
-2	14.99	7.48	.3905	-.0640	.0032	.0262	-.1206
-2	19.90	7.21	.5972	-.1063	.0050	.0330	-.1412
-2	24.74	6.91	.8398	-.1482	.0134	.0364	-.1544
0	- 5.98	-1.97	-.0964	.0176	-.0028	-.0021	.0180
0	- 1.95	-1.98	-.0417	.0119	-.0032	-.0022	.0174
0	- .13	-1.99	-.0019	.0018	-.0034	-.0013	.0154
0	1.87	-1.99	.0366	-.0082	-.0033	-.0019	.0166
0	3.92	-1.98	.0743	-.0135	-.0024	-.0021	.0179
0	5.82	-1.98	.1144	-.0193	-.0016	-.0020	.0173
0	7.87	-1.97	.1597	-.0288	-.0019	-.0017	.0176
0	9.73	-1.96	.2103	-.0383	.0004	-.0016	.0186
0	14.76	-1.91	.3595	-.0734	.0008	-.0028	.0221
0	19.59	-1.85	.5586	-.1314	.0032	-.0042	.0254
0	24.41	-1.78	.7987	-.2042	.0049	-.0059	.0292
0	.00	.00	-.0046	-.0002	.0005	.0000	.0001
0	.00	.01	-.0013	-.0005	.0001	.0005	.0001
0	.01	.01	-.0002	-.0004	-.0010	-.0007	-.0027
0	.96	.00	.0065	-.0047	.0007	.0003	.0000
0	1.98	.01	.0247	-.0089	.0007	.0005	-.0003
0	2.83	.01	.0421	-.0123	.0026	.0006	-.0004
0	3.83	.01	.0579	-.0146	.0018	.0006	-.0007
0	4.88	.01	.0765	-.0172	.0027	.0008	-.0009
0	4.93	.00	.0959	-.0172	.0005	.0002	-.0016
0	9.83	.01	.2152	-.0403	.0008	.0003	-.0036

TABLE III - AERODYNAMIC CHARACTERISTICS OF THE COMPLETE

MODEL AT M = 6.86; R = 343,000 - Continued

Body-axis data

(b) $i_H = 0$

i_V deg.	α deg.	β deg.	C_N	C_m	C_l	C_n	C_Y
0	14.78	.01	.3663	-.0749	.0025	-.0005	-.0047
0	19.75	.01	.5735	-.1311	.0033	-.0008	-.0032
0	24.68	.01	.7657	-.2021	.0066	-.0011	-.0066
0	- 5.00	.97	-.0926	.0170	.0000	.0017	-.0104
0	- 2.00	.99	-.0375	.0104	-.0013	.0013	-.0116
0	.00	.99	.0024	.0010	-.0005	.0013	-.0094
0	.06	.99	-.0015	-.0007	-.0011	.0009	-.0098
0	.98	.99	.0091	-.0055	.0003	.0009	-.0094
0	1.67	.99	.0391	-.0086	-.0014	.0013	-.0099
0	2.08	.99	.0311	-.0098	-.0009	.0009	-.0101
0	3.00	.99	.0492	-.0131	-.0018	.0011	-.0095
0	3.88	.99	.0674	-.0154	-.0019	.0011	-.0098
0	3.92	.99	.0785	-.0147	.0003	.0014	-.0105
0	4.95	.99	.0841	-.0169	-.0019	.0013	-.0110
0	5.83	.99	.1180	-.0200	-.0018	.0015	-.0115
0	7.75	.98	.1654	-.0305	-.0003	.0017	-.0115
0	9.81	.98	.2022	-.0394	-.0005	.0011	-.0116
0	9.83	.97	.2141	-.0392	.0001	.0016	-.0123
0	14.58	.96	.3621	-.0733	.0015	.0019	-.0138
0	14.85	.96	.3616	-.0752	.0008	.0013	-.0146
0	14.95	.96	.3620	-.0762	.0003	.0012	-.0168
0	19.58	.92	.5557	-.1294	.0031	.0026	-.0171
0	19.65	.93	.5663	-.1323	.0023	.0020	-.0211
0	24.42	.88	.7965	-.2008	.0065	.0037	-.0212
0	24.68	.90	.8183	-.2041	.0064	.0026	-.0259
0	- 4.97	1.97	-.0887	.0173	.0003	.0031	-.0182
0	- 2.05	1.98	-.0360	.0111	-.0017	.0028	-.0182
0	.03	1.98	.0038	.0016	-.0018	.0022	-.0178
0	.10	1.98	-.0012	-.0011	.0005	.0023	-.0168
0	1.13	1.98	.0066	-.0056	.0012	.0026	-.0169
0	1.72	1.98	.0435	-.0082	-.0018	.0028	-.0191
0	1.95	1.98	.0271	-.0100	.0001	.0028	-.0181
0	2.90	1.98	.0455	-.0134	-.0009	.0028	-.0190
0	3.68	1.98	.0809	-.0131	-.0018	.0029	-.0198
0	3.96	1.98	.0639	-.0147	-.0010	.0029	-.0194
0	4.90	1.97	.1002	-.0167	-.0032	.0024	-.0194
0	5.08	1.96	.0830	-.0169	-.0021	.0031	-.0198
0	5.76	1.97	.1196	-.0185	-.0009	.0029	-.0204
0	7.81	1.96	.1649	-.0284	-.0002	.0029	-.0203
0	9.65	1.95	.2151	-.0376	.0002	.0028	-.0211
0	9.92	1.95	.2197	-.0392	-.0011	.0024	-.0212
0	14.66	1.91	.3607	-.0717	.0017	.0039	-.0261
0	14.76	1.90	.3389	-.0735	-.0090	.0024	-.0252
0	14.84	1.95	.3805	-.0756	.0001	.0029	-.0256
0	19.56	1.85	.5572	-.1285	.0043	.0051	-.0311
0	19.82	1.83	.5382	-.1282	-.0057	.0035	-.0292
0	24.41	1.76	.7953	-.2007	.0081	.0068	-.0376
0	24.52	1.76	.7513	-.1995	.0004	.0050	-.0366
0	- 4.93	2.95	-.0943	.0172	-.0002	.0043	-.0228
0	- 2.83	2.96	-.0390	.0106	-.0015	.0042	-.0235
0	.08	2.96	-.0003	.0012	-.0016	.0042	-.0244
0	1.83	2.96	.0409	-.0080	-.0009	.0044	-.0250
0	2.03	2.97	.0042	-.0090	.0020	.0042	-.0294
0	2.93	2.96	.0176	-.0122	.0023	.0042	-.0297
0	4.00	2.96	.0767	-.0128	-.0019	.0041	-.0265
0	4.04	2.96	.0424	-.0138	.0018	.0042	-.0307
0	5.02	2.95	.0622	-.0161	.0007	.0044	-.0312
0	5.07	2.95	.0513	-.0155	.0012	.0045	-.0319
0	6.01	2.94	.0723	-.0198	.0010	.0044	-.0319
0	6.09	2.95	.1185	-.0186	-.0003	.0041	-.0269
0	6.86	2.94	.0970	-.0247	.0035	.0044	-.0324
0	7.84	2.94	.1652	-.0289	-.0007	.0040	-.0273
0	8.07	2.94	.1322	-.0295	.0026	.0043	-.0328
0	8.86	2.94	.1516	-.0343	.0034	.0043	-.0333
0	9.84	2.92	.2140	-.0395	-.0002	.0041	-.0285
0	9.91	2.93	.1789	-.0397	.0039	.0044	-.0339
0	14.77	2.85	.3673	-.0748	.0019	.0056	-.0331
0	14.77	2.82	.3767	-.0740	-.0015	.0061	-.0420
0	14.90	2.84	.3735	-.0753	-.0011	.0063	-.0397
0	19.69	2.77	.5650	-.1318	.0042	.0073	-.0397
0	19.81	2.72	.5886	-.1302	.0009	.0081	-.0514
0	24.53	2.64	.8088	-.2047	.0085	.0105	-.0475
0	24.68	2.58	.8337	-.1980	.0059	.0121	-.0638
0	.35	3.95	.0041	-.0010	.0014	.0055	-.0395
0	1.36	3.95	.0129	-.0052	.0010	.0055	-.0387
0	2.31	3.95	.0378	-.0090	.0007	.0056	-.0387
0	3.24	3.95	.0577	-.0119	-.0004	.0055	-.0393
0	4.31	3.95	.0804	-.0139	-.0016	.0056	-.0400
0	6.27	3.94	.0962	-.0202	.0021	.0056	-.0420
0	6.87	3.93	.1185	-.0243	.0028	.0055	-.0424
0	8.18	3.92	.1431	-.0294	.0035	.0055	-.0430
0	8.87	3.91	.1664	-.0348	.0042	.0056	-.0436
0	10.23	3.89	.1899	-.0400	.0049	.0056	-.0442
0	14.78	3.81	.3452	-.0762	.0024	.0077	-.0518
0	20.07	3.63	.5441	-.1323	.0057	.0106	-.0615
0	24.80	3.43	.7737	-.2004	.0123	.0164	-.0764
0	.00	4.94	-.0024	-.0016	.0008	.0071	-.0450
0	1.00	4.94	-.0010	-.0055	.0018	.0072	-.0452
0	2.34	4.94	.0145	-.0088	.0010	.0073	-.0457
0	3.37	4.94	.0277	-.0118	.0013	.0074	-.0450
0	4.32	4.93	.0562	-.0139	-.0004	.0074	-.0466
0	5.25	4.91	.0736	-.0165	.0006	.0077	-.0472
0	6.27	4.90	.1115	-.0214	.0011	.0076	-.0510
0	8.19	4.88	.1566	-.0311	.0015	.0078	-.0527
0	10.25	4.85	.2162	-.0417	.0012	.0080	-.0543
0	12.10	4.81	.2739	-.0541	.0028	.0088	-.0571
0	14.18	4.76	.3344	-.0713	.0045	.0101	-.0611
0	16.12	4.72	.3852	-.0882	.0023	.0105	-.0670
0	18.07	4.65	.4661	-.1094	.0029	.0121	-.0717
0	19.95	4.69	.5653	-.1344	.0054	.0144	-.0795
0	24.96	4.42	.8056	-.2045	.0125	.0210	-.0969
0	.30	5.93	.0003	-.0017	.0020	.0085	-.0593
0	1.19	5.93	.0119	-.0055	.0024	.0087	-.0595
0	2.26	5.92	.0260	-.0090	.0017	.0087	-.0605
0	3.25	5.91	.0468	-.0119	.0005	.0088	-.0614
0	4.23	5.90	.0663	-.0145	.0032	.0091	-.0611
0	5.31	5.90	.0902	-.0177	.0038	.0094	-.0618
0	6.19	5.89	.1133	-.0212	.0005	.0089	-.0630
0	8.20	5.86	.1616	-.0311	.0016	.0094	-.0671
0	10.21	5.83	.2175	-.0425	.0016	.0099	-.0685
0	12.25	5.76	.2769	-.0548	.0022	.0109	-.0729
0	14.18	5.74	.3413	-.0704	.0034	.0125	-.0781
0	16.14	5.65	.4223	-.0892	.0017	.0142	-.0855
0	18.09	5.55	.5063	-.1104	.0039	.0169	-.0920
0	20.06	5.47	.5951	-.1349	.0061	.0195	-.1007
0	25.00	5.22	.8395	-.2006	.0124	.0248	-.1175
0	.33	7.90	.0064	-.0020	.0003	.0113	-.0769
0	1.34	7.90	.0207	-.0063	.0005	.0116	-.0779
0	2.33	7.88	.0452	-.0101	-.0009	.0117	-.0792
0	3.33	7.88	.0663	-.0134	-.0001	.0121	-.0798
0	4.32	7.87	.0820	-.0160	.0018	.0126	-.0805
0	5.31	7.86	.1068	-.0192	.0023	.0131	-.0823
0	6.32	7.84	.1078	-.0238	.0019	.0123	-.0859
0	8.23	7.80	.1523	-.0341	.0032	.0132	-.0874

TABLE III - AERODYNAMIC CHARACTERISTICS OF THE COMPLETE

MODEL AT M = 6.86; R = 343,000 - Continued

Body-axis data

(b) $i_H = 0$

i_V deg.	α deg.	β deg.	C_N	C_m	C_l	C_n	C_Y
0	10.30	7.73	.2091	-.0481	.0031	.0151	-.0936
0	12.32	7.67	.2755	-.0604	.0022	.0166	-.1000
0	14.36	7.59	.3399	-.0742	.0051	.0186	-.1055
0	16.18	7.50	.4047	-.0939	.0050	.0202	-.1121
0	16.31	7.50	.4253	-.0919	.0007	.0206	-.1149
0	18.25	7.39	.4901	-.1149	.0062	.0230	-.1210
0	18.45	7.39	.5150	-.1124	.0016	.0232	-.1212
0	20.21	7.29	.6081	-.1365	.0046	.0255	-.1308
0	20.24	7.28	.5790	-.1387	.0095	.0251	-.1298
0	.41	9.87	-.0001	-.0025	-.0008	.0151	-.0981
0	1.28	9.86	.0103	-.0067	-.0003	.0156	-.0995
0	2.35	9.85	.0326	-.0112	-.0005	.0161	-.1007
0	3.26	9.84	.0498	-.0145	-.0005	.0165	-.1022
0	4.26	9.82	.0660	-.0179	.0015	.0171	-.1030
0	5.08	9.80	.0909	-.0208	.0019	.0179	-.1045
0	6.43	9.78	.1146	-.0259	.0004	.0174	-.1065
0	8.44	9.74	.1605	-.0377	.0027	.0184	-.1112
0	10.44	9.65	.2171	-.0513	.0026	.0204	-.1188
0	12.41	9.57	.2832	-.0645	.0028	.0227	-.1254
0	14.42	9.47	.3504	-.0780	.0094	.0245	-.1305
0	16.35	9.37	.4005	-.0934	.0025	.0256	-.1379
0	18.36	9.24	.4839	-.1131	.0040	.0288	-.1463
0	20.39	9.10	.5771	-.1359	.0078	.0319	-.1580
0	23.25	8.89	.8094	-.1931	-.0042	.0380	-.1802
2	-5.00	-1.93	-.0916	.0171	-.0019	-.0061	.0236
2	-2.08	-1.94	-.0392	.0115	-.0021	-.0059	.0226
2	- .12	-1.95	.0008	.0014	-.0023	-.0050	.0210
2	1.75	-1.94	.0386	-.0087	-.0024	-.0056	.0204
2	3.88	-1.94	.0758	-.0136	-.0017	-.0060	.0216
2	5.77	-1.93	.1166	-.0202	-.0020	-.0060	.0225
2	7.72	-1.92	.1602	-.0296	-.0014	-.0059	.0235
2	9.73	-1.91	.2105	-.0397	.0006	-.0059	.0243
2	14.58	-1.86	.3588	-.0740	.0004	-.0076	.0279
2	19.63	-1.79	.5549	-.1308	.0021	-.0093	.0318
2	24.33	-1.71	.7932	-.2037	.0050	-.0116	.0361
2	- .07	.00	-.0012	-.0001	.0000	-.0031	.0017
2	.77	.00	.0172	-.0036	-.0011	-.0031	.0013
2	1.93	.00	.0372	-.0083	-.0021	-.0031	.0015
2	2.93	.00	.0551	-.0113	-.0022	-.0033	.0022
2	3.88	.00	.0747	-.0130	-.0015	-.0034	.0019
2	5.77	.00	.1138	-.0209	-.0018	-.0034	.0016
2	7.85	.00	.1615	-.0319	-.0005	-.0038	.0022
2	9.72	.00	.2121	-.0399	-.0015	-.0039	.0016
2	14.68	.00	.3667	-.0754	-.0013	-.0044	.0019
2	19.68	.00	.5686	-.1321	.0016	-.0048	.0011
2	24.50	.00	.8121	-.2032	.0045	-.0054	-.0009
2	-5.07	1.03	-.0876	.0172	.0005	-.0020	-.0048
2	-2.07	1.03	-.0346	.0109	-.0015	-.0021	-.0046
2	- .13	1.03	.0037	.0017	-.0006	-.0020	-.0051
2	1.80	1.03	.0388	-.0076	-.0014	-.0019	-.0056
2	3.88	1.03	.0782	-.0134	.0004	-.0020	-.0058
2	5.75	1.03	.1172	-.0192	-.0006	-.0020	-.0059
2	7.72	1.02	.1637	-.0290	.0000	-.0021	-.0063
2	10.03	1.01	.2125	-.0380	.0004	-.0024	-.0068
2	14.78	1.00	.3587	-.0714	.0022	-.0025	-.0081
2	19.73	.97	.5521	-.1286	.0032	-.0023	-.0111
2	24.57	.93	.7884	-.1998	.0068	-.0019	-.0148
2	-4.97	2.01	-.0916	.0169	.0006	-.0006	-.0143
2	-2.15	2.02	-.0400	.0112	-.0013	-.0006	-.0139
2	- .13	2.02	-.0002	.0022	-.0015	-.0011	-.0130
2	1.95	2.02	.0374	-.0072	-.0016	-.0006	-.0144
2	4.02	2.02	.0744	-.0123	-.0008	-.0007	-.0143
2	5.78	2.01	.1148	-.0182	-.0021	-.0009	-.0152
2	7.81	2.00	.1580	-.0278	-.0015	-.0012	-.0149
2	9.84	2.00	.2057	-.0367	-.0003	-.0014	-.0149
2	14.68	1.95	.3520	-.0702	.0015	-.0008	-.0188
2	19.63	1.89	.5445	-.1269	.0034	.0001	-.0237
2	24.41	1.82	.7796	-.1974	.0065	.0011	-.0282
2	- 5.09	3.00	-.0937	.0166	-.0004	.0001	-.0187
2	- 1.75	3.01	-.0377	.0099	-.0016	.0001	-.0198
2	.17	3.01	.0010	.0005	-.0017	.0003	-.0198
2	2.00	3.01	.0392	-.0083	-.0028	.0002	-.0210
2	3.75	3.00	.0781	-.0136	-.0030	.0002	-.0222
2	5.92	2.99	.1189	-.0199	-.0022	.0002	-.0220
2	7.84	2.98	.1645	-.0293	-.0016	-.0002	-.0229
2	9.84	2.96	.2162	-.0400	-.0013	-.0001	-.0238
2	14.77	2.87	.3680	-.0748	-.0011	.0008	-.0281
2	19.61	2.81	.5650	-.1328	.0023	.0021	-.0347
2	24.45	2.71	.8071	-.2045	.0057	.0045	-.0423
2	- .10	4.00	.0010	.0001	-.0013	.0019	-.0350
2	1.00	3.99	.0198	-.0045	-.0014	.0022	-.0356
2	1.93	3.99	.0389	-.0086	-.0015	.0021	-.0362
2	2.98	3.99	.0581	-.0113	-.0017	.0017	-.0358
2	3.94	3.99	.0765	-.0134	-.0018	.0019	-.0361
2	6.01	3.97	.1168	-.0199	-.0041	.0025	-.0383
2	7.92	3.96	.1686	-.0301	-.0032	.0020	-.0393
2	9.79	3.94	.2172	-.0405	-.0021	.0023	-.0413
2	14.78	3.85	.3785	-.0780	-.0024	.0041	-.0494
2	19.66	3.72	.5829	-.1356	.0009	.0069	-.0593
2	24.53	3.53	.8307	-.2056	.0058	.0121	-.0744
2	.02	7.96	.0050	-.0005	-.0008	.0065	-.0727
2	.93	7.96	.0254	-.0052	-.0010	.0068	-.0731
2	1.94	7.96	.0444	-.0088	-.0021	.0068	-.0751
2	2.86	7.95	.0636	-.0124	-.0023	.0070	-.0755
2	4.04	7.93	.0840	-.0160	-.0034	.0074	-.0766
2	6.01	7.90	.1272	-.0232	-.0022	.0083	-.0802
2	7.86	7.87	.1759	-.0341	-.0030	.0086	-.0832
4	- 4.90	-1.89	-.0899	.0180	.0006	-.0104	.0297
4	- 2.12	-1.89	-.0374	.0119	-.0005	-.0099	.0273
4	- .15	-1.90	-.0012	.0022	-.0007	-.0090	.0250
4	1.95	-1.90	.0402	-.0083	-.0007	-.0095	.0263
4	3.85	-1.90	.0772	-.0133	.0002	-.0098	.0276
4	5.82	-1.88	.1162	-.0194	.0000	-.0103	.0284
4	7.77	-1.87	.1598	-.0293	-.0002	-.0102	.0293
4	9.73	-1.86	.2125	-.0392	.0011	-.0105	.0307
4	14.58	-1.81	.3629	-.0739	.0017	-.0127	.0344
4	19.51	-1.74	.5569	-.1310	.0024	-.0148	.0388
4	24.36	-1.66	.7961	-.2033	.0043	-.0177	.0437
4	- .08	.00	.0009	-.0005	-.0019	-.0066	.0066
4	.78	.00	.0208	-.0045	-.0030	-.0067	.0078
4	1.93	.00	.0396	-.0091	-.0041	-.0066	.0061
4	2.90	.00	.0588	-.0117	-.0042	-.0069	.0071
4	3.90	.00	.0783	-.0145	-.0035	-.0071	.0072
4	5.88	.00	.1200	-.0225	-.0048	-.0075	.0081
4	7.75	.00	.1664	-.0331	-.0054	-.0080	.0086
4	9.80	.00	.2135	-.0409	-.0052	-.0083	.0082
4	14.77	.00	.3666	-.0754	-.0041	-.0093	.0057
4	19.65	.00	.5613	-.1314	-.0036	-.0102	.0085
4	24.40	.00	.8128	-.2039	-.0004	-.0114	.0086
4	- 4.92	1.07	-.0916	.0169	.0055	-.0053	.0011
4	- 2.08	1.00	-.0380	.0109	.0034	-.0051	.0001
4	.00	1.06	.0018	.0015	.0032	-.0051	-.0008
4	1.92	1.06	.0400	-.0081	.0032	-.0051	-.0015
4	3.92	1.07	.0766	-.0137	.0033	-.0054	-.0014

TABLE III. - AERODYNAMIC CHARACTERISTICS OF THE COMPLETE MODEL AT M = 6.86; R = 343,000. - Concluded

Body-axis data

(b) $i_H = 0$

i_V deg.	α deg.	β deg.	C_N	C_m	C_l	C_n	C_Y
4	5.83	1.07	.1166	-.0195	.0031	-.0056	-.0012
4	7.83	1.06	.1642	-.0306	.0037	-.0059	-.0012
4	9.92	1.07	.2108	-.0383	.0042	-.0064	-.0007
4	14.92	1.04	.3574	-.0722	.0046	-.0070	-.0016
4	19.75	1.03	.5524	-.1286	.0060	-.0071	-.0036
4	24.57	.99	.7862	-.1989	.0097	-.0074	-.0061
4	- 4.92	2.05	-.0883	.0170	.0004	-.0043	-.0074
4	- 2.07	2.05	-.0362	.0108	-.0016	-.0039	-.0083
4	- .18	2.06	.0023	.0016	-.0018	-.0044	-.0091
4	1.77	2.05	.0392	-.0078	-.0016	-.0039	-.0088
4	4.02	2.05	.0767	-.0126	-.0027	-.0041	-.0093
4	5.68	2.05	.1159	-.0180	-.0019	-.0043	-.0095
4	7.83	2.04	.1596	-.0282	-.0021	-.0048	-.0097
4	9.76	2.03	.2099	-.0372	-.0017	-.0050	-.0095
4	14.76	1.99	.3582	-.0719	-.0011	-.0049	-.0120
4	19.61	1.94	.5512	-.1281	.0006	-.0046	-.0159
4	24.43	1.87	.7840	-.1982	.0047	-.0040	-.0202
4	- 4.98	3.04	-.0939	.0162	.0015	-.0035	-.0136
4	- 2.00	3.05	-.0384	.0092	.0003	-.0034	-.0150
4	.00	3.05	.0023	.0003	-.0009	-.0032	-.0152
4	1.92	3.05	.0400	-.0083	-.0010	-.0034	-.0161
4	3.92	3.04	.0789	-.0135	-.0012	-.0035	-.0170
4	5.68	3.03	.1185	-.0196	-.0005	-.0037	-.0178
4	7.68	3.03	.1655	-.0292	-.0010	-.0040	-.0191
4	9.93	3.02	.2165	-.0398	-.0007	-.0043	-.0197
4	14.69	2.97	.3681	-.0199	-.0041	-.0045	-.0238
4	19.77	2.87	.5660	-.1328	.0016	-.0031	-.0285
4	24.53	2.77	.8082	-.2042	.0048	-.0024	-.0365
4	- .10	4.04	.0025	.0007	-.0005	-.0017	-.0287
4	1.00	4.04	.0025	-.0034	-.0007	-.0017	-.0304
4	1.93	4.04	.0409	-.0074	-.0017	-.0017	-.0307
4	2.98	4.03	.0611	-.0106	-.0028	-.0020	-.0298
4	3.94	4.03	.0793	-.0122	-.0030	-.0020	-.0303
4	6.01	4.02	.1201	-.0191	-.0025	-.0014	-.0319
4	7.92	4.00	.1672	-.0292	-.0022	-.0019	-.0334
4	9.79	3.98	.2207	-.0400	-.0014	-.0020	-.0348
4	14.78	3.90	.3817	-.0779	-.0025	-.0006	-.0424
4	19.66	3.78	.5828	-.1342	.0005	.0015	-.0525
4	24.53	3.60	.8350	-.2044	.0041	.0060	-.0651
4	- .02	8.01	.0001	-.0010	.0004	.0019	-.0661
4	.96	8.01	.0196	-.0057	-.0006	.0024	-.0667
4	1.95	8.00	.0390	-.0099	-.0016	.0028	-.0671
4	2.96	7.99	.0616	-.0133	-.0020	.0030	-.0688
4	3.96	7.98	.0803	-.0159	-.0021	.0033	-.0700
4	5.94	7.95	.1247	-.0227	-.0028	.0039	-.0730
4	8.00	7.91	.1743	-.0336	-.0016	.0045	-.0769
4	9.93	7.86	.2284	-.0483	-.0007	.0057	-.0818
4	14.94	7.68	.3893	-.0841	-.0020	.0090	-.0962
4	19.93	7.43	.5948	-.1369	-.0006	.0135	-.1130
4	24.69	7.11	.8433	-.2016	.0043	.0201	-.1336
6	- 4.88	-1.83	-.0937	.0182	.0017	-.0147	.0362
6	- 2.10	-1.85	-.0410	.0122	.0007	-.0139	.0355
6	- .12	-1.86	-.0013	.0019	-.0004	-.0128	.0334
6	1.85	-1.85	.0381	-.0091	-.0005	-.0137	.0331
6	3.97	-1.85	.0760	-.0148	-.0006	-.0142	.0345
6	5.88	-1.83	.1156	-.0200	-.0008	-.0148	.0357
6	7.77	-1.82	.1613	-.0301	-.0011	-.0150	.0363
6	9.73	-1.81	.2101	-.0400	.0003	-.0153	.0373
6	14.54	-1.76	.3597	-.0750	-.0003	-.0175	.0419
6	19.59	-1.68	.5553	-.1330	.0011	-.0202	.0467
6	24.53	-1.62	.7932	-.2043	.0040	-.0215	.0574
6	- 5.00	.12	-.0916	.0174	.0010	-.0104	.0158
6	- 2.00	.11	-.0382	.0103	-.0019	-.0095	.0146
6	.00	.11	-.0002	.0017	-.0010	-.0095	.0142
6	1.75	.11	.0382	-.0070	-.0020	-.0095	.0142
6	3.75	.11	.0750	-.0127	-.0021	-.0101	.0148
6	5.83	.12	.1148	-.0194	-.0023	-.0106	.0148
6	7.67	.12	.1579	-.0296	-.0025	-.0113	.0152
6	9.50	.13	.2069	-.0389	-.0020	-.0119	.0179
6	14.33	.14	.3527	-.0713	-.0024	-.0134	.0189
6	19.33	.15	.5463	-.1269	-.0015	-.0149	.0210
6	23.92	.15	.7465	-.1972	-.2024	-.0152	.0129
6	- 4.75	1.11	-.0921	.0171	.0009	-.0092	.0057
6	- 1.75	1.11	-.0372	.0111	-.0004	-.0088	.0047
6	- .08	1.11	-.0002	.0013	-.0013	-.0088	.0046
6	2.00	1.10	.0375	-.0083	-.0023	-.0087	.0039
6	3.83	1.11	.0765	-.0139	-.0015	-.0091	.0044
6	6.00	1.11	.1158	-.0200	-.0027	-.0096	.0053
6	7.92	1.11	.1629	-.0297	-.0022	-.0103	.0060
6	9.83	1.11	.2118	-.0394	-.0017	-.0109	.0063
6	14.75	1.10	.3591	-.0730	-.0013	-.0120	.0062
6	19.59	1.08	.5541	-.1299	.0000	-.0126	.0045
6	24.42	1.05	.7905	-.2011	.0036	-.0134	.0024
6	- 4.93	2.09	-.0890	.0172	.0012	-.0079	-.0023
6	- 2.02	2.09	-.0355	.0104	-.0008	-.0074	-.0035
6	- .13	2.09	.0024	.0014	-.0017	-.0077	-.0026
6	1.72	2.09	.0429	-.0078	-.0029	-.0073	-.0041
6	3.85	2.09	.0797	-.0128	-.0028	-.0075	-.0041
6	5.88	2.08	.1214	-.0178	-.0020	-.0080	-.0040
6	7.54	2.08	.1641	-.0278	-.0022	-.0085	-.0037
6	9.78	2.07	.2131	-.0376	-.0028	-.0090	-.0046
6	14.61	2.04	.3600	-.0720	-.0011	-.0094	-.0070
6	19.61	1.99	.5562	-.1288	-.0005	-.0097	-.0101
6	24.48	1.93	.7961	-.1994	.0032	-.0099	-.0138
6	- 5.09	3.09	-.0931	.0156	.0005	-.0075	-.0095
6	- 2.08	3.10	-.0379	.0090	-.0017	-.0075	-.0095
6	- .08	3.09	.0021	.0000	-.0028	-.0071	-.0104
6	2.00	3.09	.0408	-.0092	-.0019	-.0073	-.0101
6	3.92	3.10	.0801	-.0140	-.0032	-.0076	-.0111
6	5.93	3.08	.1205	-.0203	-.0034	-.0077	-.0119
6	8.09	3.07	.1670	-.0301	-.0038	-.0082	-.0118
6	9.84	3.07	.2180	-.0407	-.0035	-.0085	-.0123
6	14.85	3.01	.3693	-.0766	-.0034	-.0088	-.0155
6	19.61	2.93	.5680	-.1338	-.0033	-.0083	-.0207
6	24.53	2.82	.8101	-.2053	.0009	-.0074	-.0271
6	- .02	4.08	.0051	-.0007	-.0006	-.0055	-.0247
6	.97	4.08	.0230	-.0047	-.0016	-.0056	-.0235
6	1.93	4.08	.0425	-.0089	-.0017	-.0055	-.0239
6	2.84	4.08	.0620	-.0121	-.0019	-.0057	-.0243
6	3.83	4.07	.0814	-.0033	-.0030	-.0057	-.0248
6	5.84	4.06	.1237	-.0204	-.0045	-.0055	-.0268
6	7.87	4.05	.1710	-.0304	-.0042	-.0061	-.0278
6	9.82	4.03	.2241	-.0413	-.0043	-.0064	-.0294
6	14.75	3.96	.3844	-.0792	-.0045	-.0056	-.0364
6	19.66	3.84	.5922	-.1367	-.0030	-.0038	-.0455
6	24.62	3.67	.7766	-.2034	.0052	-.0002	-.0575
6	- .03	8.07	.0012	-.0003	-.0007	-.0025	-.0624
6	.88	8.06	.0204	-.0050	-.0018	-.0019	-.0629
6	1.95	8.06	.0410	-.0097	-.0029	-.0017	-.0634
6	3.00	8.04	.0616	-.0124	-.0040	-.0014	-.0634
6	3.96	8.03	.0838	-.0157	-.0044	-.0014	-.0642
6	6.06	8.01	.1248	-.0227	-.0048	-.0006	-.0672
6	7.98	7.97	.1746	-.0334	-.0028	-.0006	-.0699
6	9.92	7.92	.2300	-.0475	-.0040	.0003	-.0750
6	14.86	7.75	.3891	-.0832	-.0053	.0032	-.0888

TABLE IV. - AERODYNAMIC CHARACTERISTICS OF THE HORIZONTAL-TAIL AND TOP-VERTICAL-TAIL CONFIGURATION AT M = 6.86; R = 343,000.

Body-axis data

$i_H = 0$

i_V deg.	α deg.	β deg.	C_N	C_m	C_l	C_n	C_Y
-6	- 5.00	-2.09	-.0944	.0202	-.0027	.0075	.0034
-6	- 1.92	-2.08	-.0413	.0159	-.0040	.0062	.0039
-6	- .08	-2.08	-.0019	.0071	-.0043	.0059	.0042
-6	1.92	-2.07	.0374	-.0019	-.0026	.0050	.0061
-6	3.83	-2.06	.0748	-.0065	-.0027	.0045	.0068
-6	5.76	-2.05	.1143	-.0112	-.0020	.0042	.0083
-6	7.92	-2.03	.1611	-.0207	-.0005	.0041	.0087
-6	9.84	-2.02	.2100	-.0301	-.0001	.0037	.0103
-6	14.68	-1.97	.3594	-.0645	.0012	.0021	.0142
-6	19.51	-1.90	.5568	-.1230	.0024	.0009	.0168
-6	24.34	-1.83	.7972	-.1976	.0049	.0001	.0195
-6	.00	.00	.0011	.0053	-.0012	.0056	-.0087
-6	1.03	.00	.0190	.0018	-.0022	.0047	-.0075
-6	1.95	.00	.0383	-.0019	-.0023	.0044	-.0062
-6	2.93	.00	.0576	-.0051	-.0024	.0043	-.0066
-6	3.88	.00	.0745	-.0066	-.0025	.0039	-.0069
-6	5.88	.00	.1195	-.0133	-.0041	.0034	-.0063
-6	7.87	.00	.1671	-.0239	-.0037	.0033	-.0064
-6	9.87	.00	.2171	-.0320	-.0018	.0027	-.0061
-6	14.80	.00	.3776	-.0683	-.0028	.0018	-.0053
-6	19.72	.00	.5813	-.1263	.0000	.0008	-.0057
-6	24.62	.00	.8304	-.2021	.0026	.0006	-.0071
-6	- 4.92	.91	-.0991	.0233	-.0027	.0086	-.0199
-6	- 1.83	.93	-.0426	.0174	-.0031	.0064	-.0178
-6	.08	.95	-.0029	.0082	-.0023	.0052	-.0162
-6	3.03	.96	.0551	-.0043	-.0015	.0039	-.0145
-6	4.00	.96	.0747	-.0053	-.0007	.0036	-.0141
-6	6.00	.96	.1154	-.0104	-.0020	.0034	-.0137
-6	8.83	.97	.1842	-.0251	-.0016	.0025	-.0136
-6	9.83	.96	.2093	-.0286	-.0010	.0022	-.0134
-6	14.83	.97	.3600	-.0639	.0002	.0009	-.0132
-6	19.83	.94	.5620	-.1239	.0025	.0007	-.0149
-6	24.58	.91	.8058	-.1988	.0063	.0010	-.0181
-6	- 4.78	1.89	-.0901	.0216	-.0033	.0091	-.0271
-6	- 2.00	1.93	-.0407	.0158	-.0042	.0068	-.0234
-6	- .12	1.95	-.0006	.0062	-.0035	.0053	-.0218
-6	2.00	1.95	.0380	-.0020	-.0037	.0050	-.0220
-6	3.80	1.95	.0760	-.0068	-.0029	.0043	-.0214
-6	5.73	1.96	.1153	-.0112	-.0031	.0035	-.0206
-6	7.73	1.96	.1621	-.0215	-.0035	.0024	-.0199
-6	9.85	1.96	.2092	-.0297	-.0030	.0014	-.0197
-6	14.86	1.93	.3608	-.0651	-.0008	.0007	-.0214
-6	19.59	1.90	.5587	-.1238	.0005	.0007	-.0247
-6	24.41	1.82	.7983	-.1976	.0020	.0010	-.0289
-6	- 4.84	2.89	-.0957	.0228	-.0041	.0098	-.0344
-6	- 1.92	2.93	-.0395	.0162	-.0054	.0071	-.0299
-6	.00	2.94	-.0009	.0072	-.0056	.0062	-.0289
-6	2.18	2.95	.0375	-.0010	-.0048	.0057	-.0288
-6	4.00	2.95	.0767	-.0048	-.0052	.0044	-.0276
-6	6.01	2.96	.1169	-.0091	-.0045	.0033	-.0286
-6	8.01	2.96	.1619	-.0197	-.0039	.0019	-.0262
-6	9.93	2.96	.2122	-.0297	-.0036	.0010	-.0253
-6	14.85	2.91	.3636	-.0649	-.0026	.0006	-.0281
-6	19.69	2.83	.5647	-.1237	.0003	.0008	-.0344
-6	24.36	2.74	.8064	-.1984	.0025	.0010	-.0386
-6	.13	3.94	-.0005	.0079	-.0032	.0067	-.0405
-6	1.10	3.95	.0184	.0043	-.0044	.0062	-.0412
-6	2.08	3.96	.0377	.0007	-.0045	.0053	-.0401
-6	3.01	3.96	.0557	-.0025	-.0055	.0042	-.0385
-6	4.11	3.97	.0742	-.0041	-.0048	.0037	-.0383
-6	6.04	3.97	.1165	-.0091	-.0063	.0025	-.0385
-6	8.12	3.97	.1616	-.0194	-.0051	.0010	-.0378
-6	10.05	3.96	.2132	-.0300	-.0061	.0002	-.0382
-6	14.93	3.89	.3707	-.0669	-.0054	.0000	-.0430
-6	19.86	3.78	.5704	-.1238	-.0020	.0007	-.0499
-6	24.58	3.66	.8155	-.1938	.0009	.0015	-.0598
-6	.13	7.93	.0005	.0103	-.0044	.0084	-.0717
-6	1.09	7.95	.0193	.0062	-.0055	.0075	-.0701
-6	2.14	7.95	.0381	.0026	-.0066	.0062	-.0709
-6	3.18	7.97	.0573	-.0001	-.0068	.0049	-.0691
-6	4.06	7.97	.0769	-.0022	-.0070	.0041	-.0673
-6	6.03	7.97	.1179	-.0087	-.0066	.0025	-.0674
-6	8.01	7.94	.1676	-.0194	-.0066	.0012	-.0690
-6	10.03	7.92	.2207	-.0322	-.0076	.0002	-.0699
-6	15.07	7.78	.3806	-.0679	-.0063	-.0003	-.0788
-6	19.86	7.57	.5851	-.1204	-.0063	.0012	-.0913
-6	24.93	7.29	.8252	-.1839	-.0034	-.0021	-.1056
-2	- 4.76	-2.02	-.0967	.0199	-.0008	.0021	.0104
-2	- 1.92	-2.03	-.0433	.0161	-.0021	.0020	.0094
-2	.00	-2.03	-.0051	.0073	-.0013	.0022	.0105
-2	2.00	-2.03	.0332	-.0016	-.0023	.0019	.0114
-2	3.92	-2.02	.0689	-.0061	-.0005	.0019	.0111
-2	6.01	-2.02	.1100	-.0112	-.0009	.0021	.0115
-2	8.00	-2.02	.1532	-.0204	-.0002	.0024	.0116
-2	10.09	-2.01	.2039	-.0297	.0001	.0024	.0125
-2	15.09	-1.96	.3529	-.0645	.0013	.0014	.0156
-2	19.93	-1.90	.5480	-.1223	.0028	.0006	.0191
-2	24.68	-1.83	.7869	-.1961	.0046	.0002	.0211
-2	.02	.00	.0011	.0056	-.0013	.0017	-.0043
-2	1.03	.00	.0190	.0016	-.0022	.0015	-.0038
-2	1.93	.00	.0397	-.0022	-.0024	.0014	-.0025
-2	2.98	.00	.0579	-.0048	-.0025	.0013	-.0029
-2	3.97	.00	.0777	-.0065	-.0018	.0013	-.0028
-2	5.93	.00	.1200	-.0135	-.0031	.0013	-.0030
-2	7.83	.00	.1684	-.0231	-.0039	.0012	-.0032
-2	10.00	.00	.2203	-.0313	-.0030	.0012	-.0040
-2	14.86	.00	.3782	-.0675	-.0018	.0008	-.0033
-2	19.63	.00	.5831	-.1262	.0000	.0005	-.0051
-2	24.50	.00	.8316	-.1996	.0017	.0002	-.0065
-2	- 5.00	.97	-.0973	.0214	-.0030	.0030	-.0125
-2	- 1.92	.98	-.0402	.0155	-.0024	.0020	-.0108
-2	- .17	.99	-.0006	.0074	-.0036	.0016	-.0111
-2	1.92	.99	.0363	-.0013	-.0024	.0012	-.0099
-2	3.75	.99	.0761	-.0063	-.0026	.0010	-.0100
-2	5.83	.99	.1157	-.0121	-.0027	.0011	-.0103
-2	7.75	.98	1621	-.0219	-.0021	.0010	-.0103
-2	9.83	.99	.2111	-.0302	-.0006	.0006	-.0099
-2	14.83	.97	.3619	-.0648	-.0003	.0003	-.0118
-2	19.75	.94	.5642	-.1234	.0020	.0005	-.0140
-2	24.50	.91	.8072	-.1998	.0048	.0009	-.0165
-2	- 4.82	1.97	-.0932	.0212	-.0023	.0031	-.0166
-2	- 1.95	1.99	-.0404	.0163	-.0035	.0020	-.0178
-2	.07	1.99	-.0033	.0071	-.0045	.0013	-.0172
-2	2.03	1.99	.0363	-.0013	-.0037	.0014	-.0179
-2	3.92	1.99	.0745	-.0056	-.0038	.0011	-.0175
-2	5.90	1.99	.1162	-.0111	-.0041	.0007	-.0181
-2	7.76	1.99	.1618	-.0197	-.0044	.0001	-.0174
-2	9.70	1.98	.2094	-.0295	-.0039	-.0003	-.0177
-2	14.86	1.94	.3553	-.0632	-.0023	.0000	-.0203
-2	19.71	1.89	.5494	-.1209	-.0016	.0004	-.0246
-2	24.51	1.83	.7872	-.1939	-.0008	.0007	-.0280
-2	- 4.76	2.96	-.0919	.0205	-.0016	.0036	-.0253
-2	- 1.92	2.99	-.0384	.0152	-.0027	.0020	-.0224
-2	.00	2.99	-.0006	.0070	-.0038	.0018	-.0227
-2	2.00	2.99	.0370	-.0008	-.0029	.0017	-.0218
-2	4.00	2.99	.0740	-.0046	-.0031	.0009	-.0224
-2	6.01	2.99	.1102	-.0093	-.0031	.0004	-.0222
-2	7.84	2.98	.1566	-.0176	-.0026	-.0002	-.0217

TABLE IV. - AERODYNAMIC CHARACTERISTICS OF THE HORIZONTAL-TAIL AND TOP-VERTICAL-TAIL CONFIGURATION AT M = 6.86; R = 343,000 - Continued

Body-axis data
$i_H = 0$

i_V deg.	α deg.	β deg.	C_N	C_m	C_l	C_n	C_Y
-2	9.84	2.97	.2062	-.0283	-.0031	-.0005	-.0221
-2	14.60	2.92	.3543	-.0625	-.0017	-.0002	-.0263
-2	19.69	2.83	.5484	-.1200	-.0001	.0004	-.0313
-2	24.45	2.74	.7852	-.1927	.0038	.0007	-.0364
-2	.08	3.99	-.0004	.0060	-.0023	.0020	-.0336
-2	1.07	4.00	.0183	.0024	-.0033	.0018	-.0343
-2	2.13	4.00	.0372	-.0016	-.0044	.0012	-.0334
-2	3.03	4.00	.0552	-.0031	-.0046	.0006	-.0339
-2	4.04	4.00	.0759	-.0044	-.0058	.0004	-.0341
-2	5.99	4.00	.1154	-.0108	-.0062	.0000	-.0351
-2	8.04	3.99	.1648	-.0198	-.0061	-.0008	-.0352
-2	9.99	3.97	.2162	-.0307	-.0052	-.0011	-.0369
-2	14.95	3.89	.3746	-.0675	-.0042	-.0005	-.0423
-2	19.74	3.79	.5732	-.1246	-.0040	.0005	-.0500
-2	24.83	3.64	.8237	-.1960	.0003	.0001	-.0583
-2	.05	8.00	-.0007	.0087	-.0044	.0029	-.0634
-2	1.18	8.01	.0183	.0050	-.0055	.0023	-.0638
-2	2.19	8.01	.0361	.0015	-.0065	.0017	-.0643
-2	3.10	8.02	.0552	-.0016	-.0076	.0009	-.0635
-2	4.07	8.01	.0744	-.0034	-.0078	.0004	-.0626
-2	6.04	8.00	.1140	-.0092	-.0092	-.0005	-.0634
-2	7.97	8.00	.1590	-.0188	-.0098	-.0013	-.0643
-2	10.08	7.94	.2135	-.0326	-.0082	-.0015	-.0677
-2	15.17	7.78	.3690	-.0672	-.0086	-.0010	-.0767
-2	19.98	7.56	.5626	-.1178	-.0091	.0006	-.0899
-2	24.99	7.30	.7991	-.1799	-.0054	.0018	-.1023
0	- 4.92	-2.01	-.0946	.0222	.0008	.0000	.0150
0	- 1.75	-2.01	-.0412	.0171	-.0013	.0003	.0133
0	.00	-2.02	-.0014	.0087	-.0006	.0008	.0128
0	1.97	-2.02	.0367	-.0004	-.0007	.0007	.0124
0	3.92	-2.02	.0760	-.0050	.0000	.0008	.0126
0	5.84	-2.01	.1157	-.0106	-.0001	.0010	.0128
0	7.76	-2.01	.1601	-.0191	.0015	.0017	.0124
0	9.84	-2.00	.2097	-.0285	.0019	.0019	.0132
0	14.84	-1.95	.3603	-.0632	.0031	.0013	.0157
0	19.68	-1.89	.5589	-.1221	.0044	.0004	.0183
0	24.51	-1.83	.8044	-.1972	.0076	.0000	.0206
0	.15	.00	.0000	.0051	-.0001	.0000	.0010
0	1.05	.00	.0181	.0015	-.0011	-.0001	.0005
0	2.08	.00	.0377	-.0027	-.0014	.0000	-.0021
0	2.97	.00	.0560	-.0053	-.0024	.0000	-.0019
0	4.00	.00	.0758	-.0064	-.0026	.0001	-.0022
0	5.93	.00	.1185	-.0136	-.0031	.0002	-.0027
0	7.83	.00	.1660	-.0231	-.0027	.0002	-.0024
0	9.78	.00	.2146	-.0312	-.0025	.0003	-.0029
0	14.73	.00	.3774	-.0685	-.0015	.0002	-.0035
0	19.75	.00	.5839	-.1277	.0004	.0002	-.0057
0	24.62	.00	.8414	-.2033	.0029	.0000	-.0069
0	- 4.83	1.00	-.0957	.0213	-.0019	.0005	-.0086
0	- 1.83	1.00	-.0399	.0156	-.0023	.0000	-.0078
0	- .08	1.01	-.0004	.0075	-.0025	-.0002	-.0080
0	1.83	1.01	.0378	-.0014	-.0025	-.0003	-.0077
0	3.75	1.01	.0764	-.0062	-.0016	-.0002	-.0077
0	5.92	1.00	.1162	-.0116	-.0018	-.0001	-.0084
0	7.92	1.00	.1633	-.0214	-.0011	-.0001	-.0081
0	9.83	1.00	.2131	-.0297	-.0008	-.0003	-.0089
0	14.92	.97	.3653	-.0645	-.0006	-.0001	-.0108
0	19.75	.94	.5646	-.1230	.0027	.0004	-.0140
0	24.75	.91	.8070	-.1986	.0054	.0007	-.0165
0	- 4.77	1.99	-.0917	.0213	-.0005	.0006	-.0146
0	- 1.93	2.01	-.0409	.0155	-.0033	.0000	-.0143
0	.00	2.01	-.0031	.0078	-.0034	-.0004	-.0134
0	2.03	2.01	.0354	-.0009	-.0036	-.0001	-.0142
0	4.06	2.01	.0697	-.0051	-.0036	-.0001	-.0150
0	5.73	2.00	.1097	-.0098	-.0038	-.0003	-.0154
0	7.76	2.00	.1548	-.0190	-.0042	-.0008	-.0150
0	9.99	1.99	.2030	-.0274	-.0037	-.0008	-.0159
0	14.79	1.94	.3502	-.0616	-.0022	-.0004	-.0194
0	19.81	1.89	.5427	-.1184	-.0013	.0004	-.0234
0	24.98	1.82	.7790	-.1920	.0000	.0007	-.0276
0	- 4.93	2.99	-.0940	.0214	-.0014	.0010	-.0211
0	- 2.08	3.01	-.0390	.0157	-.0027	-.0001	-.0208
0	.00	3.01	-.0003	.0077	-.0019	-.0002	-.0199
0	1.92	3.01	.0389	-.0009	-.0021	-.0001	-.0208
0	3.83	3.02	.0766	-.0050	-.0023	-.0007	-.0210
0	5.84	3.00	.1175	-.0097	-.0026	-.0008	-.0209
0	7.93	3.00	.1645	-.0192	-.0022	-.0012	-.0212
0	9.93	2.99	.2129	-.0297	-.0007	-.0014	-.0219
0	14.85	2.92	.3660	-.0644	-.0008	-.0006	-.0267
0	19.77	2.84	.5649	-.1224	.0013	.0001	-.0317
0	24.45	2.74	.8081	-.1967	.0045	.0004	-.0363
0	.07	4.02	.0010	.0057	-.0015	-.0001	-.0305
0	1.05	4.02	.0184	.0028	-.0024	-.0001	-.0308
0	2.02	4.03	.0373	-.0002	-.0035	-.0006	-.0305
0	3.06	4.02	.0564	-.0033	-.0046	.0010	-.0305
0	4.14	4.02	.0632	-.0037	-.0050	-.0010	-.0309
0	5.98	4.01	.1155	-.0098	-.0053	-.0012	-.0318
0	7.94	4.00	.1623	-.0197	-.0050	-.0016	-.0328
0	9.87	3.98	.2151	-.0301	-.0041	-.0017	-.0341
0	14.86	3.90	.3701	-.0661	-.0030	-.0008	-.0401
0	19.76	3.79	.5716	-.1237	-.0012	.0004	-.0487
0	24.57	3.65	.8144	-.1929	.0024	.0015	-.0574
0	- .02	8.03	-.0006	.0075	-.0035	.0002	-.0611
0	1.03	8.04	.0188	.0035	-.0056	.0000	-.0628
0	1.97	8.04	.0377	-.0002	-.0065	-.0006	-.0591
0	3.03	8.04	.0584	-.0029	-.0069	-.0011	-.0615
0	3.97	8.03	.0768	-.0046	-.0071	-.0014	-.0625
0	5.98	8.02	.1176	-.0108	-.0064	-.0021	-.0623
0	7.95	7.98	.1662	-.0201	-.0082	-.0025	-.0654
0	9.92	7.94	.2187	-.0342	-.0070	-.0025	-.0691
0	14.84	7.80	.3737	-.0679	-.0076	-.0018	-.0789
0	19.88	7.58	.5750	-.1204	-.0065	.0001	-.0903
0	24.76	7.31	.8110	-.1816	-.0033	.0014	-.1036
2	- 4.67	-1.97	-.0963	.0221	.0007	-.0027	.0198
2	- 1.92	-1.99	-.0427	.0171	-.0014	-.0019	.0170
2	- .08	-1.99	-.0016	.0079	-.0016	-.0011	.0140
2	2.00	-2.00	.0347	-.0019	-.0015	-.0011	.0152
2	3.92	-1.99	.0740	-.0061	-.0007	-.0007	.0153
2	5.84	-1.99	.1144	-.0116	.0000	-.0003	.0148
2	7.76	-2.00	.1588	-.0200	-.0003	.0006	.0147
2	9.84	-1.99	.2103	-.0301	.0008	.0010	.0139
2	14.76	-1.95	.3616	-.0650	.0009	.0007	.0166
2	19.86	-1.89	.5613	-.1244	.0030	.0001	.0188
2	24.51	-1.83	.8038	-.1993	.0052	-.0003	.0211
2	.00	.00	.0000	.0055	-.0003	-.0016	.0009
2	1.02	.00	.0178	.0020	-.0012	-.0015	.0008
2	2.22	.00	.0370	-.0022	-.0013	-.0014	.0004
2	2.97	.00	.0564	-.0043	-.0015	-.0013	-.0002
2	3.95	.00	.0759	-.0060	-.0026	-.0012	.0000
2	5.93	.00	.1181	-.0124	-.0031	-.0010	-.0004
2	7.92	.00	.1667	-.0231	-.0009	-.0008	-.0003
2	9.78	.00	.2184	-.0317	.0000	-.0006	-.0011
2	14.86	.00	.3757	-.0677	-.0017	-.0001	-.0033
2	19.63	.00	.5811	-.1265	.0010	.0000	-.0047
2	24.90	.00	.8302	-.1983	.0025	-.0001	-.0068
2	- 4.92	1.03	-.0979	.0209	.0001	-.0020	-.0040
2	- 1.83	1.03	-.0400	.0157	-.0004	-.0020	-.0051
2	- .08	1.02	-.0014	.0070	-.0005	-.0018	-.0051

TABLE IV. - AERODYNAMIC CHARACTERISTICS OF THE HORIZONTAL-TAIL AND TOP-VERTICAL-TAIL CONFIGURATION AT M = 6.86; R = 343,000 - Concluded

Body-axis data

$i_H = 0$

i_V deg	α deg.	β deg.	C_N	C_m	C_l	C_n	C_Y
2	2.00	1.02	.0371	-.0020	-.0005	-.0016	-.0055
2	3.83	1.02	.0755	-.0068	-.0005	-.0015	-.0066
2	5.75	1.01	.1165	-.0122	-.0007	-.0012	-.0063
2	7.83	1.01	.1621	-.0220	.0000	-.0011	-.0070
2	10.00	1.00	.2121	-.0302	-.0007	-.0010	-.0079
2	14.83	.97	.3640	-.0652	.0006	-.0005	-.0103
2	19.75	.95	.5637	-.1240	.0019	-.0002	-.0134
2	24.58	.91	.8071	-.1993	.0056	.0005	-.0162
2	- 4.90	2.02	-.0890	.0206	.0003	-.0022	-.0108
2	- 2.03	2.03	-.0396	.0154	-.0016	-.0021	-.0110
2	- .15	2.03	-.0003	.0073	-.0018	-.0020	-.0118
2	1.78	2.02	.0375	-.0010	-.0018	-.0015	-.0126
2	3.83	2.03	.0738	-.0053	-.0018	-.0016	-.0134
2	5.93	2.01	.1134	-.0106	-.0010	-.0015	-.0130
2	7.91	2.01	.1592	-.0194	-.0013	-.0017	-.0140
2	9.68	2.00	.2076	-.0288	-.0008	-.0017	-.0141
2	15.91	1.94	.3556	-.0627	-.0003	-.0007	-.0194
2	19.68	1.89	.5506	-.1206	.0004	.0001	-.0231
2	24.61	1.83	.7875	-.1941	.0013	.0004	-.0276
2	- 4.93	3.02	-.0914	.0199	-.0006	-.0015	-.0177
2	- 1.92	3.04	-.0389	.0146	-.0027	-.0021	-.0173
2	.00	3.03	-.0004	.0067	-.0028	-.0019	-.0165
2	2.08	3.03	.0361	-.0014	-.0038	-.0017	-.0174
2	3.92	3.02	.0724	-.0046	-.0030	-.0020	-.0181
2	5.84	3.02	.1119	-.0093	-.0033	-.0020	-.0189
2	7.93	3.00	.1545	-.0188	-.0045	-.0020	-.0199
2	9.93	2.99	.2069	-.0283	-.0034	-.0019	-.0208
2	14.85	2.92	.3519	-.0628	-.0020	-.0008	-.0258
2	19.77	2.84	.5408	-.1191	-.0004	.0000	-.0314
2	24.45	2.75	.7746	-.1901	.0033	.0003	-.0354
2	.05	4.04	-.0016	.0054	-.0022	-.0021	-.0279
2	1.07	4.04	.0147	.0019	-.0030	-.0021	-.0267
2	2.08	4.04	.0335	-.0016	-.0041	-.0022	-.0281
2	3.04	4.04	.0527	-.0032	-.0053	-.0027	-.0278
2	4.01	4.04	.0723	-.0048	-.0064	-.0024	-.0285
2	6.04	4.03	.1114	-.0111	-.0068	-.0023	-.0303
2	7.92	4.01	.1574	-.0199	-.0066	-.0025	-.0315
2	9.74	3.99	.2115	-.0308	-.0077	-.0024	-.0329
2	14.86	3.91	.3687	-.0671	-.0059	-.0012	-.0404
2	19.82	3.79	.5672	-.1245	-.0058	.0001	-.0487
2	24.67	3.81	.8113	-.1931	-.0015	.0012	-.0570
2	.02	8.06	-.0018	.0070	-.0033	-.0021	-.0545
2	1.03	8.06	.0161	.0035	-.0043	-.0023	-.0552
2	1.99	8.06	.0355	-.0003	-.0045	-.0026	-.0558
2	2.96	8.06	.0550	-.0034	-.0056	-.0042	-.0565
2	4.02	8.05	.0758	-.0051	-.0069	-.0030	-.0571
2	6.04	8.03	.1150	-.0109	-.0063	-.0031	-.0590
2	7.98	8.00	.1634	-.0204	-.0054	-.0035	-.0623
2	9.89	7.96	.2179	-.0339	-.0065	-.0033	-.0663
2	14.93	7.89	.3745	-.0683	-.0057	-.0021	-.0756
2	19.83	7.58	.5712	-.1195	-.0052	-.0002	-.0905
2	24.71	7.32	.8083	-.1808	-.0030	.0013	-.1020
6	- 4.92	-1.90	-.0937	.0224	.0025	-.0086	.0251
6	- 2.00	-1.93	-.0405	.0178	.0004	-.0067	.0226
6	.08	-1.95	-.0024	.0086	.0003	-.0050	.0205
6	2.00	-1.96	.0336	-.0002	-.0006	-.0044	.0191
6	3.92	-1.95	.0705	-.0047	.0002	-.0037	.0187
6	5.84	-1.96	.1091	-.0097	.0001	-.0029	.0176
6	7.76	-1.97	.1533	-.0188	.0007	-.0016	.0164
6	9.84	-1.97	.2020	-.0276	.0020	-.0005	.0159
6	14.84	-1.94	.3494	-.0621	.0015	.0001	.0167
6	19.68	-1.89	.5390	-.1195	.0032	.0000	.0179
6	24.34	-1.83	.7702	-.1913	.0061	-.0005	.0203
6	.13	.00	.0015	.0066	.0014	-.0053	.0060
6	1.08	.00	.0191	.0026	.0004	-.0049	.0040
6	2.00	.00	.0380	-.0014	.0004	-.0045	.0043
6	2.88	.00	.0581	-.0041	.0001	-.0042	.0043
6	4.02	.00	.0782	-.0057	-.0001	-.0039	.0042
6	5.97	.00	.1201	-.0120	-.0015	-.0033	.0027
6	7.95	.00	.1672	-.0222	-.0013	-.0029	.0020
6	9.73	.00	.2191	-.0308	-.0005	-.0023	.0012
6	14.97	.00	.3769	-.0669	-.0006	-.0013	-.0014
6	19.72	.00	.5826	-.1266	.0026	-.0005	-.0038
6	24.60	.00	.8299	-.2005	.0039	-.0005	-.0052
6	- 4.75	1.09	-.0961	.0222	.0018	-.0074	.0032
6	- 2.08	1.01	-.0410	.0163	.0006	-.0061	.0005
6	- .08	1.02	-.0026	.0079	-.0004	-.0054	-.0002
6	1.83	1.06	.0370	-.0007	.0004	-.0045	-.0014
6	3.92	1.05	.0747	-.0057	-.0007	-.0040	-.0032
6	5.67	1.04	.1144	-.0113	-.0009	-.0034	-.0042
6	7.75	1.03	.1620	-.0214	-.0004	-.0030	-.0046
6	9.83	1.01	.2116	-.0297	.0000	-.0026	-.0054
6	14.75	.99	.3643	-.0646	.0003	-.0013	-.0086
6	19.67	.95	.5625	-.1231	.0018	-.0003	-.0123
6	24.25	.92	.8085	-.1988	.0052	.0003	-.0165
6	- 5.15	2.08	-.0907	.0215	.0013	-.0070	-.0040
6	- 1.87	2.08	-.0392	.0164	-.0016	-.0062	-.0046
6	.03	2.07	-.0003	.0079	-.0018	-.0055	-.0070
6	2.05	2.06	.0371	-.0007	-.0018	-.0045	-.0083
6	3.83	2.05	.0741	-.0049	-.0019	-.0041	-.0087
6	5.77	2.04	.1128	-.0101	-.0020	-.0036	-.0100
6	7.78	2.02	.1588	-.0195	-.0023	-.0034	-.0110
6	9.95	2.01	.2074	-.0286	-.0019	-.0030	-.0125
6	14.83	1.97	.3568	-.0628	-.0006	-.0014	-.0179
6	19.71	1.90	.5532	-.1205	-.0003	-.0003	-.0233
6	24.58	1.83	.7900	-.1933	.0004	.0001	-.0275
6	- 5.09	3.08	-.0907	.0199	.0011	-.0065	-.0112
6	- 2.08	3.08	-.0373	.0143	.0010	-.0062	-.0125
6	.00	3.07	-.0002	.0069	-.0010	-.0054	-.0132
6	2.08	3.07	.0375	-.0002	-.0021	-.0048	-.0140
6	3.92	3.06	.0738	-.0043	-.0013	-.0047	-.0147
6	5.93	3.04	.1118	-.0099	-.0014	-.0039	-.0164
6	7.93	3.02	.1567	-.0188	-.0018	-.0036	-.0180
6	9.76	3.00	.2074	-.0282	-.0015	-.0031	-.0196
6	14.60	2.93	.3522	-.0622	-.0011	-.0015	-.0250
6	19.61	2.84	.5424	-.1186	.0015	-.0002	-.0309
6	24.45	2.75	.7761	-.1904	.0045	.0001	-.0362
6	.12	4.09	-.0027	.0052	-.0012	-.0057	-.0218
6	1.03	4.08	.0146	.0022	-.0023	-.0053	-.0252
6	2.03	4.08	.0335	-.0018	-.0023	-.0054	-.0222
6	2.99	4.07	.0526	-.0034	-.0034	-.0054	-.0231
6	3.98	4.07	.0722	-.0044	-.0037	-.0049	-.0249
6	5.99	4.05	.1117	-.0113	-.0041	-.0043	-.0274
6	7.97	4.03	.1582	-.0196	-.0048	-.0040	-.0292
6	9.97	4.01	.2113	-.0304	-.0031	-.0038	-.0329
6	14.90	3.91	.3684	-.0672	-.0040	-.0017	-.0403
6	19.84	3.79	.5710	-.1249	-.0033	-.0001	-.0485
6	24.67	3.66	.8115	-.1934	.0002	.0010	-.0574
6	.03	8.11	-.0002	.0056	-.0016	-.0063	-.0502
6	1.13	8.11	.0175	.0021	-.0026	-.0061	-.0509
6	2.02	8.10	.0368	-.0016	-.0027	-.0060	-.0514
6	2.86	8.09	.0560	-.0037	-.0029	-.0060	-.0517
6	4.08	8.08	.0750	-.0062	-.0041	-.0058	-.0547
6	6.08	8.06	.1162	-.0116	-.0029	-.0055	-.0578
6	8.05	8.02	.1612	-.0213	-.0044	-.0052	-.0601
6	9.87	7.97	.2143	-.0344	-.0036	-.0046	-.0635
6	15.02	7.81	.3715	-.0686	-.0051	-.0030	-.0766
6	19.88	7.59	.5678	-.1189	-.0038	-.0008	-.0899
6	24.76	7.32	.8022	-.1800	-.0018	.0008	-.1025

TABLE V. - AERODYNAMIC CHARACTERISTICS OF THE HORIZONTAL-TAIL AND BOTTOM-VERTICAL-TAIL CONFIGURATION AT M = 6.86; R = 343,000.

Body-axis data

$i_H = 0$

i_V, deg.	α, deg.	β, deg.	C_N	C_m	C_l	C_n	C_Y
-6	- 4.95	-2.05	-.0902	.0088	-.0016	.0043	.0073
-6	- 2.17	-2.06	-.0365	.0046	-.0011	.0046	.0065
-6	.17	-2.07	.0036	-.0045	-.0006	.0056	.0013
-6	1.82	-2.08	.0430	-.0134	-.0006	.0061	.0045
-6	3.78	-2.08	.0810	-.0184	.0001	.0072	.0034
-6	5.83	-2.09	.1195	-.0244	.0000	.0077	.0031
-6	7.68	-2.08	.1658	-.0338	.0024	.0084	.0024
-6	9.74	-2.08	.2156	-.0422	.0027	.0088	.0033
-6	14.69	-2.04	.3694	-.0780	.0046	.0093	.0041
-6	19.53	-2.00	.5746	-.1362	.0063	.0096	.0056
-6	24.39	-1.93	.8184	-.2092	.0091	.0095	.0045
-6	.08	.00	.0027	-.0064	.0009	.0049	-.0099
-6	1.00	.00	.0219	-.0105	.0016	.0057	-.0127
-6	2.05	.00	.0412	-.0146	.0015	.0057	-.0131
-6	3.00	.00	.0604	-.0166	.0031	.0064	-.0144
-6	3.97	.00	.0803	-.0192	.0029	.0068	-.0147
-6	5.95	.00	.1203	-.0261	.0035	.0081	-.0154
-6	7.87	.00	.1681	-.0363	.0037	.0093	-.0174
-6	9.92	.00	.2181	-.0446	.0046	.0104	-.0194
-6	14.78	.00	.3746	-.0790	.0054	.0131	-.0232
-6	19.73	.00	.5764	-.1350	.0068	.0147	-.0266
-6	24.58	.00	.8235	-.2056	.0113	.0163	-.0320
-6	- 5.17	.96	-.0893	.0078	.0010	.0037	-.0139
-6	- 2.17	.95	-.0338	.0025	.0016	.0048	-.0149
-6	.08	.95	.0054	-.0062	.0015	.0051	-.0159
-6	1.58	.93	.0443	-.0154	.0024	.0066	-.0174
-6	3.75	.92	.0823	-.0210	.0023	.0077	-.0198
-6	5.83	.89	.1234	-.0265	.0031	.0094	-.0230
-6	7.67	.88	.1697	-.0374	.0039	.0107	-.0254
-6	9.67	.86	.2192	-.0452	.0043	.0122	-.0276
-6	14.33	.81	.3703	-.0789	.0056	.0155	-.0361
-6	19.42	.76	.5725	-.1362	.0079	.0185	-.0411
-6	23.83	.71	.8178	-.2090	.0114	.0219	-.0470
-6	- 4.97	1.96	-.0863	.0078	.0034	.0040	-.0212
-6	- 1.99	1.95	-.0348	.0030	.0014	.0049	-.0225
-6	- .02	1.95	.0040	-.0061	.0013	.0053	-.0234
-6	1.93	1.93	.0427	-.0153	.0023	.0069	-.0242
-6	3.92	1.91	.0810	-.0201	.0021	.0082	-.0268
-6	5.85	1.90	.1215	-.0249	.0029	.0099	-.0300
-6	7.76	1.86	.1670	-.0351	.0046	.0115	-.0326
-6	9.90	1.84	.2162	-.0436	.0039	.0132	-.0361
-6	14.76	1.76	.3669	-.0776	.0060	.0174	-.0441
-6	19.58	1.68	.5641	-.1344	.0091	.0211	-.0533
-6	24.36	1.59	.8066	-.2067	.0122	.0250	-.0625
-6	- 4.89	2.96	-.0921	.0067	.0035	.0037	-.0285
-6	- 1.84	2.95	-.0351	.0012	.0023	.0053	-.0256
-6	- .10	2.94	.0042	-.0076	.0029	.0061	-.0311
-6	1.85	2.93	.0426	-.0157	.0019	.0071	-.0305
-6	3.87	2.90	.0807	-.0207	.0025	.0086	-.0361
-6	5.79	2.88	.1200	-.0267	.0034	.0105	-.0377
-6	7.83	2.85	.1679	-.0362	.0038	.0122	-.0415
-6	9.68	2.82	.2192	-.0455	.0040	.0141	-.0451
-6	14.60	2.72	.3699	-.0804	.0050	.0189	-.0560
-6	19.60	2.60	.5711	-.1379	.0069	.0232	-.0663
-6	24.37	2.47	.8130	-.2097	.0111	.0285	-.0774
-6	.07	3.93	.0018	-.0084	.0029	.0070	-.0357
-6	1.03	3.93	.0024	-.0126	.0017	.0079	-.0416
-6	2.04	3.92	.0420	-.0169	.0016	.0084	-.0421
-6	2.88	3.91	.0604	-.0184	.0014	.0084	-.0425
-6	3.94	3.89	.0800	-.0210	.0013	.0098	-.0428
-6	5.91	3.85	.1187	-.0268	.0038	.0126	-.0497
-6	7.80	3.82	.1651	-.0367	.0041	.0143	-.0532
-6	9.90	3.78	.2179	-.0464	.0030	.0162	-.0582
-6	14.90	3.64	.3701	-.0822	.0042	.0225	-.0736
-6	19.72	3.48	.5770	-.1381	.0076	.0277	-.0849
-6	24.72	3.27	.8194	-.2064	.0151	.0343	-.1008
-6	.02	7.93	.0072	-.0117	.0042	.0087	-.0733
-6	.99	7.92	.0264	-.0157	.0031	.0104	-.0790
-6	1.94	7.90	.0464	-.0199	.0058	.0122	-.0804
-6	2.96	7.77	.0660	.0236	.0056	.0218	-.0834
-6	4.01	7.83	.0855	-.0261	.0045	.0163	-.0865
-6	5.99	7.77	.1286	-.0327	.0059	.0198	-.0957
-6	7.98	7.70	.1774	-.0429	.0041	.0228	-.1041
-6	9.89	7.62	.2292	-.0560	.0042	.0266	-.1115
-6	14.84	7.39	.3860	-.0910	.0049	.0354	-.1336
-6	19.85	7.08	.5936	-.1452	.0098	.0445	-.1565
-6	24.83	6.87	.8156	-.1833	.0164	.0404	-.1580
-2	- 4.98	-2.02	-.0893	.0045	-.0008	.0020	.0110
-2	- 2.08	-2.03	-.0365	.0046	-.0021	.0018	.0116
-2	- .07	-2.04	.0035	-.0044	-.0014	.0024	.0102
-2	1.75	-2.04	.0416	-.0135	-.0014	.0025	.0106
-2	3.78	-2.04	.0782	-.0178	-.0006	.0026	.0096
-2	5.72	-2.03	.1165	-.0231	.0003	.0025	.0125
-2	7.63	-2.02	.1631	-.0326	.0008	.0026	.0108
-2	9.57	-2.00	.2130	-.0413	.0022	.0023	.0129
-2	14.63	-1.95	.3625	-.0758	.0026	.0012	.0162
-2	19.49	-1.89	.5600	-.1315	.0053	.0002	.0188
-2	24.38	-1.82	.7977	-.2035	.0066	-.0012	.0227
-2	.08	.00	.0038	-.0061	-.0001	.0023	-.0051
-2	1.07	.00	.0231	-.0103	.0007	.0025	-.0066
-2	1.97	.00	.0424	-.0144	.0006	.0024	-.0057
-2	2.95	.00	.0611	-.0169	.0005	.0024	-.0034
-2	4.03	.00	.0796	-.0184	.0004	.0027	-.0025
-2	6.03	.00	.1222	-.0254	.0017	.0032	-.0030
-2	8.02	.00	.1708	-.0353	.0027	.0037	-.0063
-2	9.92	.00	.2199	-.0432	.0020	.0038	-.0046
-2	14.87	.00	.3805	-.0793	.0027	.0045	-.0060
-2	19.83	.00	.5860	-.1367	.0041	.0050	-.0096
-2	24.75	.00	.8328	-.2081	.0062	.0058	-.0140
-2	- 4.92	.98	-.0941	.0090	.0004	.0011	-.0080
-2	- 2.17	.99	-.0384	.0037	-.0010	.0012	-.0109
-2	.08	.99	.0014	-.0051	.0008	.0015	-.0098
-2	2.08	.98	.0397	-.0142	-.0002	.0022	-.0108
-2	3.75	.98	.0798	-.0193	.0007	.0026	-.0116
-2	5.75	.96	.1195	-.0242	.0006	.0033	-.0123
-2	7.75	.95	.1664	-.0345	.0012	.0038	-.0141
-2	9.92	.93	.2154	-.0437	.0026	.0047	-.0154
-2	14.83	.91	.3670	-.0525	.0019	.0062	-.0197
-2	19.67	.87	.5665	-.1335	.0042	.0080	-.0247
-2	24.42	.82	.8117	-.2069	.0077	.0099	-.0289
-2	- 5.00	1.99	-.0881	.0080	.0007	.0010	-.0160
-2	- 2.10	1.99	-.0354	.0032	-.0014	.0013	-.0173
-2	- .07	1.99	.0036	-.0059	-.0015	.0013	-.0171
-2	1.92	1.98	.0409	-.0142	-.0016	.0022	-.0189
-2	3.85	1.98	.0793	-.0190	-.0008	.0027	-.0204
-2	5.93	1.96	.1197	-.0239	-.0010	.0036	-.0223
-2	7.80	1.94	.1648	-.0336	-.0013	.0044	-.0239
-2	9.80	1.92	.2127	-.0417	-.0009	.0054	-.0257
-2	14.63	1.85	.3633	-.0763	.0002	.0080	-.0321
-2	19.65	1.79	.5614	-.1329	.0024	.0103	-.0387
-2	24.44	1.70	.8020	-.2053	.0077	.0129	-.0454
-2	- 5.14	2.99	-.0909	.0079	.0017	.0008	-.0188
-2	- 2.05	2.99	-.0357	.0027	.0013	.0016	-.0230
-2	- .12	2.99	.0036	-.0053	-.0008	.0020	-.0241
-2	1.78	2.99	.0416	-.0144	.0001	.0023	-.0242
-2	3.75	2.96	.0802	-.0185	-.0002	.0033	-.0267
-2	5.81	2.95	.1210	-.0238	-.0005	.0044	-.0293
-2	7.68	2.92	.1600	-.0333	.0005	.0052	-.0308

TABLE V. - AERODYNAMIC CHARACTERISTICS OF THE HORIZONTAL-TAIL AND BOTTOM-VERTICAL-TAIL CONFIGURATION AT M = 6.86; R = 343,000. - Continued

Body-axis data

$i_H = 0$

i_V deg.	α deg.	β deg.	C_N	C_m	C_l	C_n	C_Y
-2	9.66	2.90	.2183	-.0430	.0003	.0064	-.0347
-2	14.66	2.81	.3715	-.0785	.0015	.0097	-.0416
-2	19.55	2.72	.5697	-.1352	.0046	.0125	-.0505
-2	24.50	2.59	.8140	-.2073	.0076	.0165	-.0597
-2	.10	3.99	.0066	-.0078	.0016	.0025	-.0304
-2	1.00	3.98	.0255	-.0113	.0006	.0030	-.0308
-2	2.04	3.98	.0448	-.0149	.0012	.0031	-.0350
-2	3.01	3.97	.0650	-.0186	.0019	.0031	-.0351
-2	4.03	3.96	.0836	-.0195	.0017	.0040	-.0352
-2	5.94	3.93	.1270	-.0260	.0019	.0059	-.0398
-2	7.92	3.90	.1739	-.0351	.0011	.0070	-.0432
-2	9.92	3.86	.2278	-.0455	.0017	.0085	-.0464
-2	14.88	3.75	.3871	-.0824	.0020	.0125	-.0589
-2	19.79	3.59	.5922	-.1399	.0037	.0166	-.0720
-2	24.64	3.39	.8419	-.2088	.0104	.0235	-.0869
-2	.00	8.00	.0044	-.0088	.0032	.0030	-.0662
-2	1.04	7.98	.0249	-.0134	.0031	.0043	-.0668
-2	2.00	7.97	.0443	-.0175	.0029	.0056	-.0713
-2	3.01	7.95	.0649	-.0206	.0036	.0067	-.0739
-2	4.04	7.92	.0841	-.0241	.0043	.0081	-.0752
-2	5.93	7.87	.1223	-.0292	.0039	.0110	-.0808
-2	7.91	7.81	.1706	-.0387	.0039	.0131	-.0878
-2	9.95	7.73	.2246	-.0523	.0037	.0163	-.0951
-2	14.94	7.50	.3801	-.0875	.0042	.0209	-.1155
-2	19.76	7.22	.5816	-.1411	.0069	.0311	-.1357
-2	24.83	6.94	.8138	-.1894	.0138	.0327	-.1465
0	- 4.84	-2.01	-.0901	.0084	-.0017	.0006	.0139
0	- 2.08	-2.01	-.0366	.0040	-.0031	.0002	.0114
0	.00	-2.01	.0020	-.0045	-.0032	.0006	.0126
0	2.08	-2.01	.0406	-.0138	-.0024	.0002	.0129
0	3.92	-2.01	.0765	-.0187	-.0014	.0001	.0139
0	5.84	-1.99	.1165	-.0241	-.0016	-.0003	.0147
0	8.92	-1.98	.1876	-.0380	-.0003	-.0010	.0171
0	10.08	-1.96	.2122	-.0424	.0004	-.0013	.0175
0	14.83	-1.90	.3607	-.0766	.0009	-.0032	.0218
0	19.68	-1.90	.5521	-.1317	.0027	-.0050	.0250
0	24.38	-1.76	.7868	-.2025	.0047	-.0069	.0289
0	.17	.00	.0026	-.0063	.0001	.0000	.0000
0	1.00	.00	.0220	-.0105	-.0001	.0001	-.0017
0	2.00	.00	.0417	-.0142	-.0002	.0001	-.0020
0	3.05	.00	.0610	-.0168	-.0004	.0000	-.0024
0	4.00	.00	.0801	-.0189	-.0006	.0001	-.0014
0	6.07	.00	.1208	-.0249	-.0010	.0002	-.0021
0	8.05	.00	.1665	-.0349	.0013	.0001	-.0027
0	9.98	.00	.2192	-.0431	.0012	.0002	-.0036
0	14.73	.00	.3755	-.0783	-.0004	.0002	-.0025
0	19.72	.00	.5783	-.1358	.0033	-.0003	-.0045
0	24.45	.00	.8242	-.2065	.0049	-.0006	-.0090
0	- 5.00	1.01	-.0874	.0088	-.0010	-.0001	-.0091
0	- 2.08	1.01	-.0349	.0039	-.0021	-.0004	-.0086
0	- .17	1.01	.0023	-.0045	-.0012	-.0003	-.0082
0	1.75	1.01	.0397	-.0131	-.0022	.0000	-.0090
0	3.75	1.00	.0757	-.0177	-.0014	.0001	-.0096
0	5.75	1.00	.1144	-.0224	-.0016	.0004	-.0096
0	7.75	.99	.1604	-.0332	-.0010	.0007	-.0104
0	9.75	.98	.2091	-.0407	-.0007	.0011	-.0112
0	14.58	.96	.3504	-.0729	.0007	.0019	-.0141
0	19 58	.92	.5442	-.1270	.0021	.0030	-.0174
0	24.08	.88	.7762	-.1980	.0051	.0041	-.0215
0	- 4.88	2.01	-.0861	.0086	.0005	-.0002	-.0132
0	- 2.05	2.01	-.0347	.0036	-.0014	-.0001	-.0127
0	- .13	2.01	.0036	-.0047	-.0015	-.0003	-.0135
0	1.88	2.01	.0428	-.0136	-.0016	.0002	-.0143
0	3.90	1.99	.0792	-.0176	-.0007	.0003	-.0150

i_V deg.	α deg	β deg	C_N	C_m	C_l	C_n	C_Y
0	5.80	1.99	.1199	-.0230	-.0019	.0009	-.0166
0	7.68	1.97	.1642	-.0323	-.0022	.0015	-.0178
0	9.75	1.96	.2081	-.0409	-.0004	.0020	-.0192
0	14.75	1.90	.3637	-.0745	-.0002	.0038	-.0240
0	19.63	1.84	.5603	-.1310	.0025	.0055	-.0300
0	24.43	1.76	.7978	-.2027	.0047	.0074	-.0352
0	- 4.95	3.01	-.0909	.0079	.0007	-.0004	-.0189
0	- 2.14	3.01	-.0361	.0031	-.0006	-.0002	-.0202
0	- .03	3.01	.0036	-.0050	-.0008	-.0001	-.0211
0	1.77	3.01	.0418	-.0137	.0000	.0000	-.0218
0	3.70	3.00	.0808	-.0179	-.0002	.0006	-.0238
0	5.59	2.99	.1208	-.0232	.0005	.0013	-.0252
0	7.69	2.96	.1667	-.0328	.0001	.0019	-.0273
0	9.74	2.93	.2163	-.0421	.0004	.0027	-.0294
0	14.68	2.87	.3677	-.0766	.0002	.0050	-.0369
0	19.62	2.77	.5709	-.1334	.0037	.0072	-.0444
0	24.41	2.65	.8080	-.2046	.0068	.0105	-.0533
0	.22	4.01	.0053	-.0068	.0017	.0004	-.0253
0	.98	4.01	.0243	-.0104	.0007	.0007	-.0258
0	1.92	4.01	.0435	-.0141	.0005	.0007	-.0262
0	2.96	4.00	.0623	-.0172	-.0006	.0008	-.0292
0	3.99	3.99	.0803	-.0184	.0001	.0017	-.0289
0	5.98	3.96	.1193	-.0237	.0006	.0030	-.0336
0	7.97	3.94	.1657	-.0336	.0018	.0035	-.0359
0	9.94	3.91	.2185	-.0425	-.0003	.0045	-.0394
0	14.93	3.80	.3746	-.0782	.0002	.0082	-.0507
0	19.86	3.66	.5771	-.1337	.0032	.0109	-.0600
0	24.68	3.47	.8149	-.2027	.0061	.0173	-.0763
0	.03	8.02	.0039	-.0078	.0005	.0008	-.0606
0	.99	8.01	.0235	-.0116	.0004	.0017	-.0615
0	1.95	8.00	.0448	-.0159	.0002	.0028	-.0666
0	2.83	7.98	.0657	-.0187	-.0001	.0039	-.0668
0	3.86	7.95	.0867	-.0218	.0006	.0054	-.0696
0	5.91	7.91	.1259	-.0270	.0011	.0076	-.0752
0	7.93	7.85	.1754	-.0368	.0011	.0095	-.0798
0	9.92	7.78	.2269	-.0500	.0002	.0120	-.0874
0	14.96	7.56	.3854	-.0846	.0008	.0184	-.1045
0	19.83	7.30	.5834	-.1366	.0039	.0249	-.1263
0	24.71	6.98	.8207	-.1947	.0093	.0309	-.1447
2	- 2.08	-1.99	-.0895	.0083	-.0018	-.0008	.0155
2	- 2.08	-.199	-.0356	.0039	-.0040	-.0012	.0161
2	.00	-1.99	.0020	-.0046	-.0032	-.0012	.0147
2	2.08	-1.99	.0401	-.0138	-.0033	-.0018	.0158
2	3.92	-1.98	.0789	-.0190	-.0025	-.0023	.0163
2	5.83	-1.96	.1171	-.0243	-.0017	-.0031	.0176
2	8.93	-1.95	.1623	-.0334	-.0011	-.0037	.0197
2	10.08	-1.93	.2130	-.0423	.0002	-.0046	.0215
2	14.83	-1.87	.3633	-.0759	.0007	-.0074	.0277
2	19.68	-1.79	.5579	-.1324	.0025	-.0098	.0330
2	24.38	-1.71	.7987	-.2042	.0034	-.0123	.0372
2	.13	.00	.0026	-.0054	.0001	-.0016	.0051
2	1.08	.00	.0230	-.0095	-.0011	-.0021	.0033
2	2.15	.00	.0424	-.0138	-.0021	-.0020	.0029
2	3.15	.00	.0618	-.0164	-.0022	-.0022	.0038
2	4.07	.00	.0811	-.0181	-.0025	-.0024	.0034
2	5.98	.00	.1229	-.0251	-.0020	-.0026	.0028
2	7.97	.00	.1703	-.0356	-.0008	-.0027	.0021
2	9.88	.00	.2189	-.0435	.0003	-.0034	.0040
2	14.82	.00	.3761	-.0789	-.0014	-.0043	.0050
2	19.67	.00	.5805	-.1358	.0021	-.0049	.0016
2	24.50	.00	.8265	-.2064	.0038	-.0056	.0037
2	- 5.17	1.01	-.0919	.0092	.0002	-.0010	-.0052
2	- 1.92	1.02	-.0354	.0044	-.0003	-.0016	-.0063
2	- .17	1.03	.0038	-.0048	-.0004	-.0019	-.0055

TABLE V. - AERODYNAMIC CHARACTERISTICS OF THE HORIZONTAL-TAIL AND BOTTOM-VERTICAL-TAIL CONFIGURATION AT M = 6.86; R = 343,000. - Concluded

Body-axis data

$i_H = 0$

i_V deg.	α deg.	β deg.	C_N	C_m	C_l	C_n	C_Y
2	1.92	1.02	.0427	-.0131	.0005	-.0018	-.0060
2	3.75	1.02	.0820	-.0184	.0003	-.0021	-.0061
2	5.83	1.02	.1222	-.0237	-.0009	-.0022	-.0060
2	7.67	1.02	.1676	-.0336	-.0002	-.0023	-.0060
2	9.67	1.01	.2176	-.0423	.0002	-.0022	-.0065
2	14.67	1.00	.3652	-.0766	.0007	-.0020	-.0083
2	19.58	.97	.5676	-.1324	.0037	-.0017	-.0116
2	24.42	.93	.8112	-.2066	.0061	-.0012	-.0142
2	- 5.00	2.01	-.0896	.0084	.0026	-.0013	-.0127
2	- 1.98	2.02	-.0377	.0035	.0006	-.0014	-.0123
2	- .08	2.03	.0024	-.0052	-.0006	-.0019	-.0132
2	1.88	2.03	.0397	-.0131	-.0006	-.0017	-.0137
2	3.88	2.02	.0766	-.0179	-.0007	-.0018	-.0138
2	5.87	2.02	.1167	-.0227	-.0009	-.0016	-.0146
2	7.77	2.00	.1618	-.0325	-.0012	-.0014	-.0155
2	9.77	1.99	.2115	.0414	-.0008	-.0010	-.0164
2	14.75	1.94	.3614	-.0747	.0006	-.0001	-.0207
2	19.68	1.89	.5583	-.1317	.0021	.0009	-.0250
2	24.48	1.81	.7963	-.2030	.0058	.0021	-.0308
2	- 5.01	3.02	-.0903	.0082	.0007	-.0018	-.0170
2	- 5.01	3.03	-.0905	.0082	.0007	-.0018	-.0161
2	- 2.14	3.03	-.0345	.0030	-.0006	-.0017	-.0166
2	.03	3.03	.0036	-.0050	-.0008	-.0019	-.0173
2	1.80	3.02	.0418	-.0134	-.0010	-.0018	-.0186
2	3.78	3.01	.0801	-.0174	-.0013	-.0015	-.0203
2	5.69	3.00	.1212	-.0227	-.0008	-.0012	-.0209
2	7.78	2.97	.1653	-.0324	-.0004	-.0009	-.0222
2	9.73	2.92	.2149	-.0419	-.0003	-.0004	-.0245
2	14.68	2.82	.3666	-.0764	.0001	.0012	-.0296
2	19.57	2.72	.5697	-.1342	.0031	.0029	-.0368
2	.02	4.04	.0014	-.0068	.0009	-.0022	-.0242
2	1.07	4.04	.0204	-.0114	.0007	-.0019	-.0284
2	1.98	4.04	.0407	-.0151	-.0004	-.0020	-.0276
2	2.96	4.03	.0599	-.0177	-.0006	-.0019	-.0293
2	3.88	4.03	.0764	-.0186	-.0016	-.0017	-.0297
2	6.01	4.00	.1183	-.0245	.0007	-.0005	-.0303
2	7.82	3.98	.1665	-.0345	-.0001	.0001	-.0339
2	9.90	3.95	.2199	-.0435	-.0004	.0007	-.0372
2	14.83	3.85	.3787	-.0801	.0001	.0034	-.0462
2	19.71	3.73	.5816	-.1363	-.0079	.0058	-.0578
2	24.60	3.55	.8354	-.2082	.0058	.0108	-.0703
2	.07	8.06	.0066	-.0082	.0011	-.0020	-.0607
2	1.04	8.05	.0260	-.0123	.0011	-.0013	-.0612
2	2.04	8.04	.0458	-.0160	.0028	-.0004	-.0615
2	3.06	8.02	.0649	-.0190	.0026	.0006	-.0655
2	4.07	8.00	.0851	-.0216	.0013	.0014	-.0683
2	6.01	7.96	.1270	-.0276	.0018	.0033	-.0705
2	8.01	7.90	.1755	-.0370	.0009	.0049	-.0769
2	10.07	7.84	.2314	-.0506	.0005	.0071	-.0838
2	14.87	7.64	.3795	-.0843	.0006	.0129	-.0986
2	19.91	7.37	.5946	-.1379	.0017	.0189	-.1205
2	24.94	7.03	.8452	-.2021	.0067	.0260	-.1451
6	- 5.05	-1.96	-.0899	.0081	-.0017	-.0033	.0201
6	- 2.08	-1.96	-.0375	-.0037	-.0020	-.0045	.0209
6	- .25	-1.95	.0034	-.0053	-.0023	-.0047	.0203
6	1.77	-1.94	.0412	-.0149	-.0023	-.0061	.0231
6	3.77	-1.92	.0788	-.0193	-.0015	-.0072	.0250
6	5.70	-1.90	.1184	-.0251	-.0016	-.0088	.0299
6	7.65	-1.88	.1629	-.0344	-.0010	-.0102	.0319
6	9.73	-1.85	.2111	-.0432	-.0015	-.0118	.0345
6	14.56	-1.77	.3613	-.0767	-.0011	-.0161	.0428
6	19.56	-1.69	.5608	-.1343	.0003	-.0198	.0489
6	24.43	-1.62	.8024	-.2073	.0034	-.0216	.0601
6	- .02	.00	.0038	-.0061	-.0001	-.0048	.0049

i_V deg.	α deg.	β deg	C_N	C_m	C_l	C_n	C_Y
6	.85	.00	.0243	-.0104	-.0013	-.0057	.0044
6	1.90	.00	.0438	-.0147	-.0013	-.0060	.0067
6	2.97	.00	.0629	-.0172	-.0023	-.0066	.0088
6	3.93	.00	.0808	-.0182	-.0025	-.0070	.0097
6	5.88	.00	.1213	-.0253	-.0029	-.0082	.0090
6	7.92	.00	.1677	-.0358	-.0025	-.0094	.0109
6	9.80	.00	.2196	-.0440	-.0035	-.0104	.0138
6	14.68	.00	.3767	-.0794	-.0025	-.0131	.0150
6	19.62	.00	.5780	-.1364	-.0016	-.0153	.0166
6	24.53	.00	.8193	-.2064	.0003	-.0171	.0161
6	- 4.92	1.04	-.0886	.0088	.0000	-.0034	-.0019
6	- 1.92	1.05	-.0391	.0030	-.0010	-.0044	-.0023
6	- .17	1.06	-.0002	-.0051	-.0011	-.0052	-.0010
6	1.83	1.07	.0400	-.0144	-.0012	-.0058	-.0011
6	3.67	1.02	.0785	-.0194	-.0003	-.0068	.0005
6	5.83	1.08	.1191	-.0248	-.0015	-.0076	.0013
6	7.67	1.08	.1669	-.0346	-.0010	-.0084	.0027
6	9.83	1.08	.2153	-.0434	-.0015	-.0090	.0028
6	14.58	1.08	.3652	-.0778	-.0012	-.0106	.0033
6	19.58	1.06	.5670	-.1339	.0010	-.0116	.0026
6	24.33	.91	.8066	-.2061	.0027	-.0123	.0000
6	- 4.92	2.04	-.0893	.0085	-.0023	-.0037	-.0089
6	- 2.07	2.06	-.0354	.0039	-.0034	-.0044	-.0083
6	- .07	2.07	.0033	-.0055	-.0035	-.0052	-.0073
6	1.78	2.07	.0419	-.0142	-.0035	-.0057	-.0065
6	3.75	2.08	.0812	-.0180	-.0038	-.0065	-.0066
6	5.78	2.07	.1206	-.0232	-.0039	-.0070	-.0059
6	7.75	2.07	.1633	-.0329	-.0040	-.0074	-.0053
6	9.70	2.06	.2117	-.0408	-.0035	-.0077	-.0060
6	14.78	2.07	.3593	-.0744	-.0040	-.0083	-.0083
6	19.67	1.98	.5552	-.1303	-.0022	-.0087	-.0108
6	24.38	1.91	.7911	-.2008	-.0011	-.0087	-.0146
6	- 4.99	3.05	-.0909	.0081	.0000	-.0041	-.0081
6	- 2.15	3.06	-.0362	.0032	-.0024	-.0049	-.0126
6	- .13	3.07	.0033	-.0053	-.0027	-.0053	-.0134
6	1.80	3.08	.0422	-.0134	-.0019	-.0059	-.0124
6	3.88	3.07	.0801	-.0180	-.0031	-.0062	-.0123
6	5.91	3.06	.1203	-.0232	-.0025	-.0063	-.0133
6	7.73	3.06	.1671	-.0326	-.0040	-.0070	-.0144
6	9.73	3.04	.2176	-.0421	-.0037	-.0072	-.0143
6	14.72	2.99	.3673	-.0768	-.0037	-.0071	-.0179
6	19.52	2.91	.5660	-.1343	-.0015	-.0069	-.0237
6	24.38	2.81	.8115	-.2059	.0017	-.0058	-.0307
6	.03	4.09	.0011	-.0060	-.0010	-.0060	-.0209
6	1.02	4.08	.0201	-.0101	-.0020	-.0057	-.0213
6	2.06	4.09	.0394	-.0137	-.0013	-.0059	-.0216
6	3.01	4.08	.0585	-.0163	-.0014	-.0063	-.0206
6	4.01	4.08	.0773	-.0174	-.0026	-.0063	-.0210
6	5.91	4.06	.1157	-.0236	-.0038	-.0056	-.0231
6	7.94	4.05	.1627	-.0325	-.0027	-.0061	-.0239
6	9.94	4.03	.2149	-.0432	-.0037	-.0061	-.0250
6	14.95	3.95	.3720	-.0788	-.0038	-.0051	-.0316
6	19.81	3.83	.5760	-.1348	-.0026	-.0041	-.0401
6	24.67	3.68	.8116	-.2023	.0008	-.0006	-.0515
6	.07	8.11	.0012	-.0072	-.0004	-.0063	-.0536
6	1.04	8.10	.0219	-.0119	-.0005	-.0055	-.0539
6	2.02	8.10	.0402	-.0150	.0003	-.0052	-.0554
6	3.06	8.08	.0612	-.0182	.0009	-.0050	-.0571
6	3.99	8.06	.0808	-.0208	-.0002	-.0040	-.0591
6	5.98	8.03	.1243	-.0270	-.0008	-.0027	-.0627
6	8.01	7.99	.1723	-.0360	-.0007	-.0024	-.0677
6	10.08	7.93	.2258	-.0493	-.0027	-.0010	-.0714
6	14.89	7.74	.3835	-.0839	-.0030	.0031	-.0870
6	19.86	7.50	.5859	-.1351	.0000	.0071	-.1029
6	24.79	7.18	.8301	-.1988	.0026	.0126	-.1222

TABLE VI. - AERODYNAMIC CHARACTERISTICS OF THE HORIZONTAL-TAIL CONFIGURATION

AT M = 6.86; R = 343,000.

Body-axis data

$i_H = 0$

α deg.	β deg.	C_N	C_m	C_l	C_n	C_Y
-5.00	-2.03	-.0920	.0128	-.0019	.0029	.0104
-2.18	-2.04	-.0386	.0089	-.0032	.0029	.0085
-.15	-2.04	-.0004	.0007	-.0024	.0032	.0081
1.98	-2.04	.0361	-.0073	-.0023	.0033	.0083
3.83	-2.03	.0750	-.0107	-.0016	.0034	.0079
5.78	-2.03	.1138	-.0152	-.0017	.0031	.0084
7.65	-2.02	.1596	-.0238	-.0009	.0031	.0096
9.70	-2.01	.2082	-.0322	-.0004	.0027	.0106
14.44	-1.95	.3576	-.0650	.0012	.0014	.0138
19.46	-1.90	.5557	-.1236	.0031	.0005	.0171
24.34	-1.83	.7947	-.1977	.0041	.0000	.0181
-4.92	.00	-.0897	.0125	-.0016	.0002	-.0003
-2.17	.00	-.0353	.0081	-.0019	.0000	.0003
-.17	.00	.0009	.0009	-.0020	.0001	-.0003
1.92	.00	.0379	-.0059	-.0021	.0002	-.0009
3.92	.00	.0759	-.0106	-.0013	.0002	-.0014
5.75	.00	.1157	-.0158	-.0014	.0002	-.0004
7.67	.00	.1593	-.0245	-.0007	.0003	-.0004
9.67	.00	.2081	-.0323	-.0003	.0004	-.0011
14.50	.00	.3538	-.0636	.0002	.0003	-.0019
19.75	.00	.5442	-.1186	.0021	.0001	-.0023
24.08	.00	.7787	-.1908	.0054	.0000	-.0018
-4.83	1.01	-.0901	.0127	-.0009	-.0014	-.0050
-2.08	1.02	-.0376	.0084	-.0021	-.0016	-.0061
-.08	1.02	-.0004	.0017	-.0022	-.0017	-.0052
2.08	1.02	.0376	-.0065	-.0023	-.0014	-.0059
3.92	1.02	.0715	-.0107	-.0023	-.0014	-.0065
5.92	1.01	.1138	-.0154	-.0017	-.0013	-.0072
7.92	1.01	..1582	-.0240	-.0020	-.0010	-.0073
9.83	1.00	.2059	-.0313	-.0016	-.0008	-.0084
14.67	.97	.3511	-.0643	-.0011	-.0001	-.0109
19.58	.94	.5429	-.1197	.0005	.0005	-.0141
24.58	.91	.7787	-.1926	.0045	.0011	-.0170
-5.09	2.04	-.0904	.0133	-.0004	-.0033	-.0112
-2.17	2.05	-.0382	.0089	-.0024	-.0032	-.0108
-.22	2.04	-.0004	.0016	-.0025	-.0031	-.0115
1.90	2.04	.0378	-.0059	-.0026	-.0032	-.0116
3.85	2.03	.0763	-.0100	-.0038	-.0028	-.0124

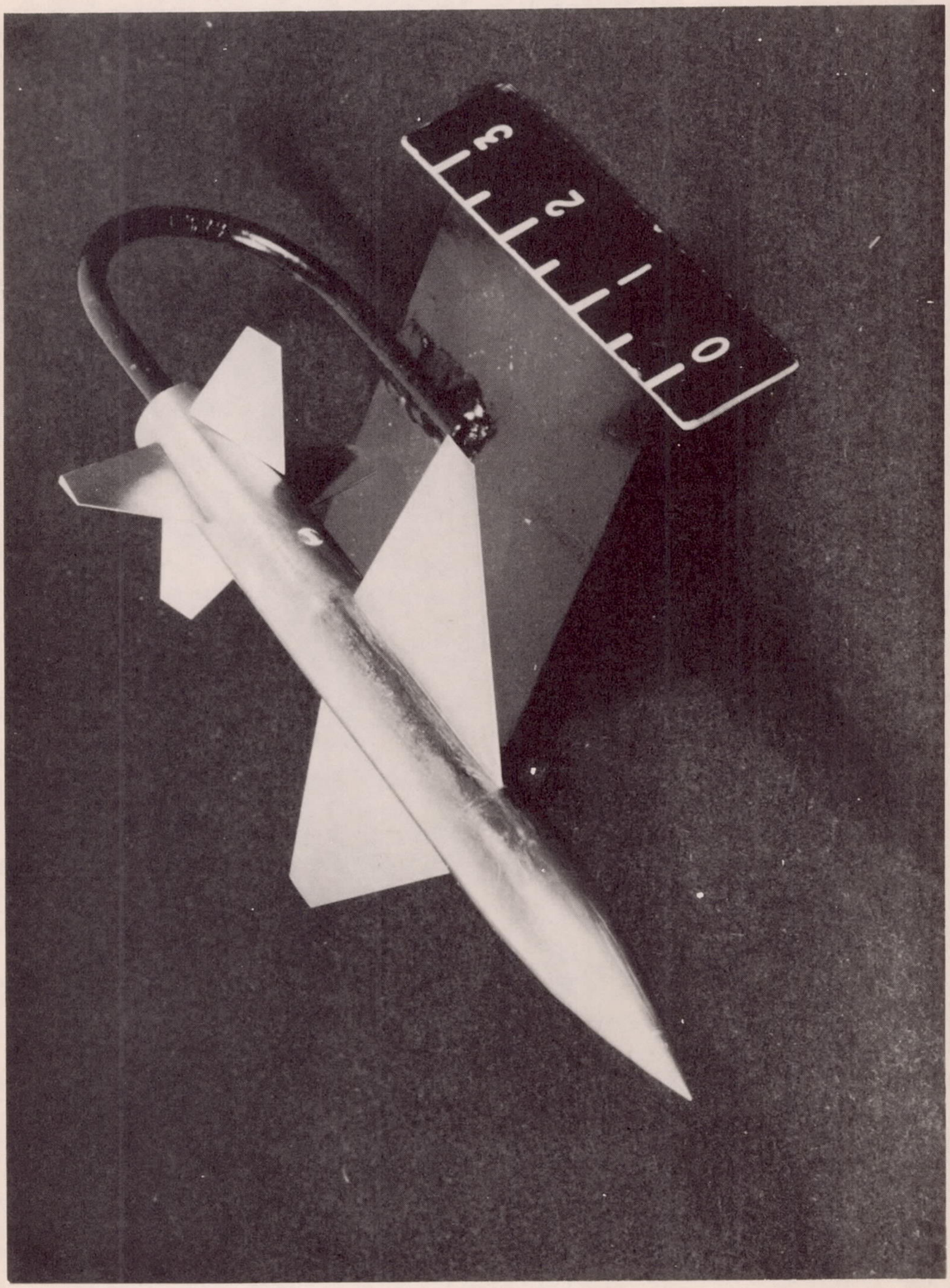
α deg.	β deg.	C_N	C_m	C_l	C_n	C_Y
5.73	2.03	.1149	-.0139	-.0029	-.0026	-.0130
7.68	2.01	.1603	-.0228	-.0032	-.0024	-.0141
9.85	2.00	.2090	-.0315	-.0038	-.0019	-.0156
14.71	1.95	.3600	-.0641	-.0026	-.0006	-.0201
19.63	1.89	.5592	-.1223	-.0001	.0005	-.0250
24.51	1.82	.8000	-.1968	.0026	.0009	-.0291
-4.94	3.05	-.0906	.0123	-.0003	-.0038	-.0142
-2.18	3.06	-.0362	.0080	-.0007	-.0043	-.0151
-.15	3.06	.0022	.0006	-.0010	-.0042	-.0151
1.78	3.06	.0397	-.0063	-.0012	-.0041	-.0159
3.88	3.06	.0777	-.0102	-.0006	-.0041	-.0162
5.83	3.04	.1179	-.0142	-.0019	-.0035	-.0180
7.69	3.02	.1623	-.0229	-.0006	-.0031	-.0192
9.64	3.01	.2151	-.0325	-.0007	-.0026	-.0211
14.64	2.93	.3645	-.0647	.0006	-.0009	-.0266
19.63	2.84	.5652	-.1242	.0016	.0004	-.0337
24.41	2.74	.8041	-.1964	.0037	.0008	-.0379
-5.18	4.07	-.0905	.0122	.0024	-.0052	-.0222
-2.08	4.08	-.0360	.0086	.0028	-.0060	-.0197
.00	4.09	.0010	.0022	.0019	-.0061	-.0193
1.92	4.09	.0394	-.0051	.0010	-.0064	-.0198
3.93	4.07	.0754	-.0088	.0002	-.0060	-.0206
5.77	4.06	.1143	-.0135	-.0006	-.0053	-.0227
7.69	4.03	.1585	-.0209	-.0012	-.0049	-.0254
9.94	4.01	.2072	-.0303	-.0017	-.0044	-.0271
14.61	3.92	.3535	-.0638	-.0042	-.0024	-.0339
19.37	3.80	.5465	-.1207	-.0051	-.0008	-.0395
24.22	3.67	.7767	-.1893	-.0086	.0002	-.0454
-5.22	8.11	-.0937	.0133	.0008	-.0087	-.0523
-2.10	8.15	-.0368	.0071	-.0015	-.0100	-.0498
.00	8.15	.0035	.0003	-.0017	-.0104	-.0488
1.94	8.15	.0394	-.0052	-.0027	-.0099	-.0489
3.87	8.12	.0787	-.0099	-.0039	-.0092	-.0523
5.89	8.09	.1192	-.0136	-.0033	-.0081	-.0547
7.74	8.05	.1669	-.0223	-.0048	-.0074	-.0583
9.85	7.99	.2176	-.0349	-.0045	-.0065	-.0636
14.81	7.82	.3676	-.0668	-.0055	-.0038	-.0744
19.76	7.59	.5605	-.1170	-.0054	-.0013	-.0881
24.63	7.33	.7921	-.1779	-.0031	.0004	-.1016

TABLE VII - AERODYNAMIC CHARACTERISTICS OF THE VERTICAL-TAIL CONFIGURATION AT M = 6.86; R = 343,000.

Body-axis data

$i_V = 0$

α, deg	β, deg	C_N	C_m	C_l	C_n	C_Y
-5.00	.00	-.0718	-.0117	.0008	.0000	.0007
-1.83	.00	-.0262	-.0045	.0010	.0000	.0009
.00	.00	.0035	.0000	.0011	.0001	.0001
1.92	.00	.0335	.0046	.0012	.0001	.0000
3.83	.00	.0577	.0092	.0000	.0002	.0000
5.83	.00	.0969	.0147	-.0003	.0002	.0003
7.92	.00	.1286	.0189	-.0001	.0002	.0008
9.67	.00	.1740	.0222	-.0002	.0003	.0003
14.83	.00	.3008	.0268	-.0008	.0003	.0014
20.08	.00	.4672	.0263	-.0014	.0004	.0020
24.92	.00	.6691	.0197	-.0028	.0005	.0042



L-88000

Figure 1.- Photograph of complete model with $i_H = -20^\circ$.

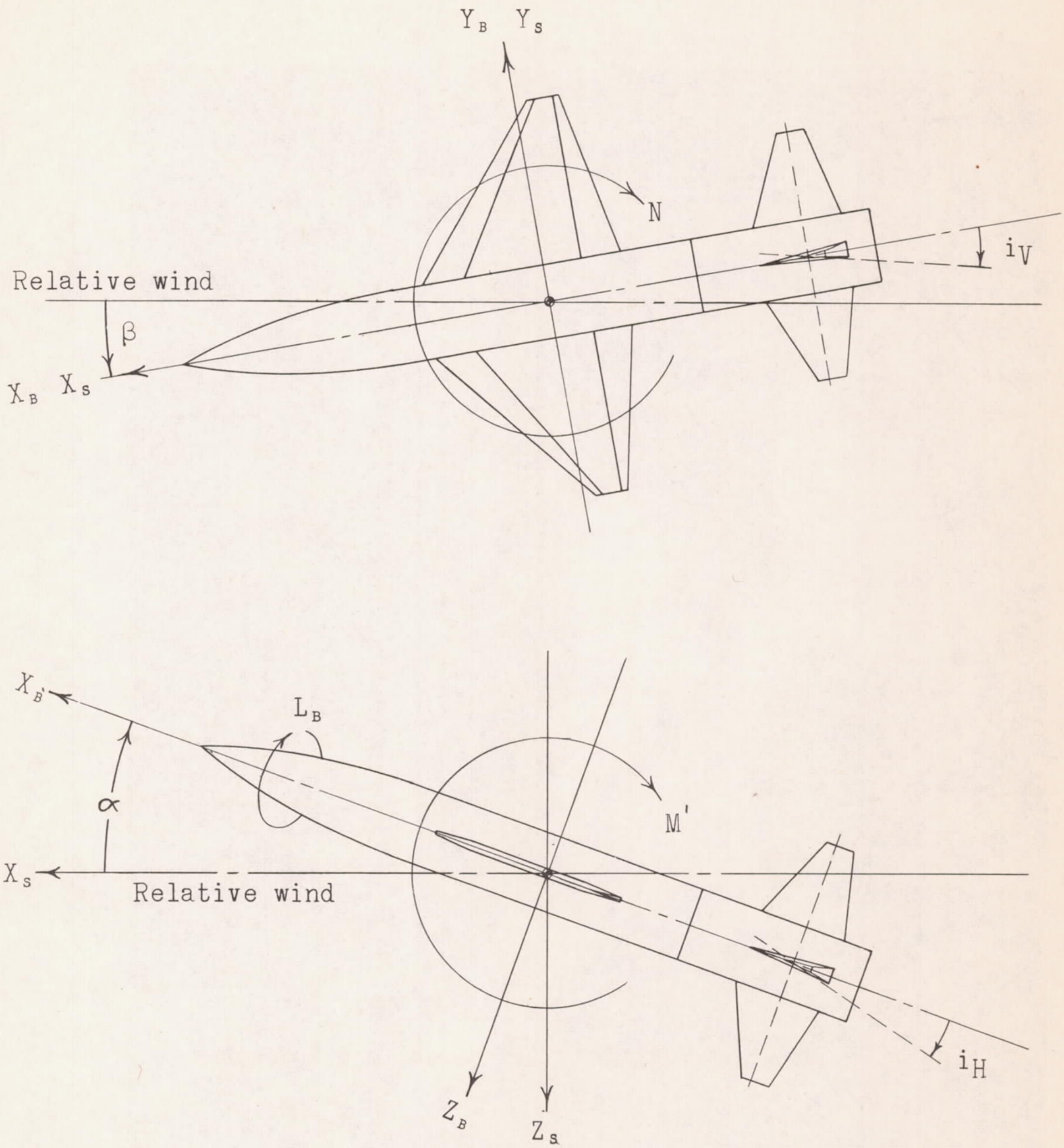


Figure 2.- Systems of reference axes; arrows indicate positive direction.

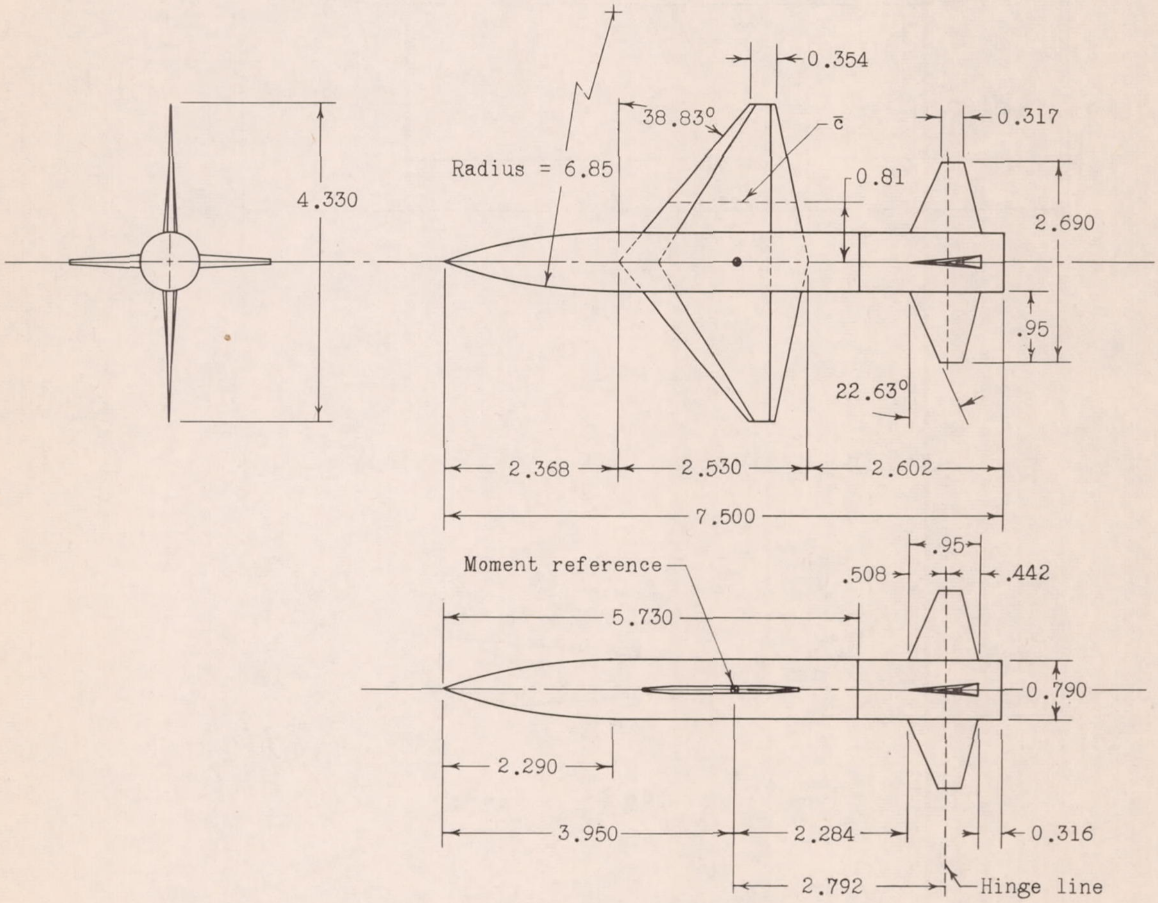
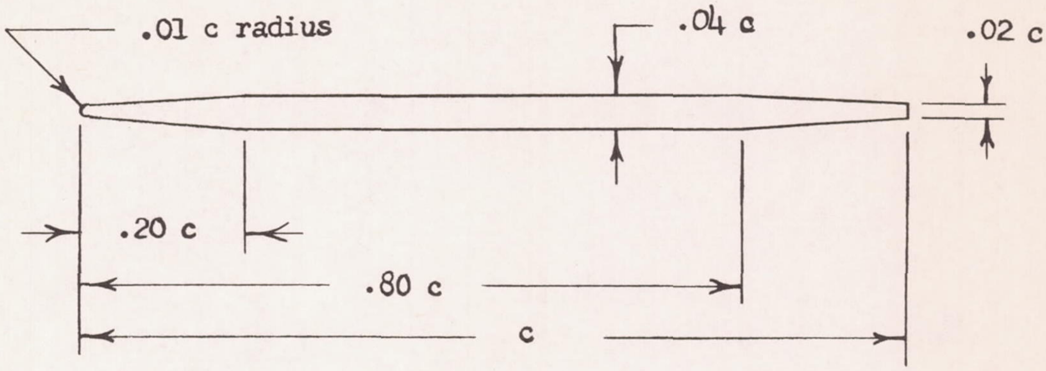
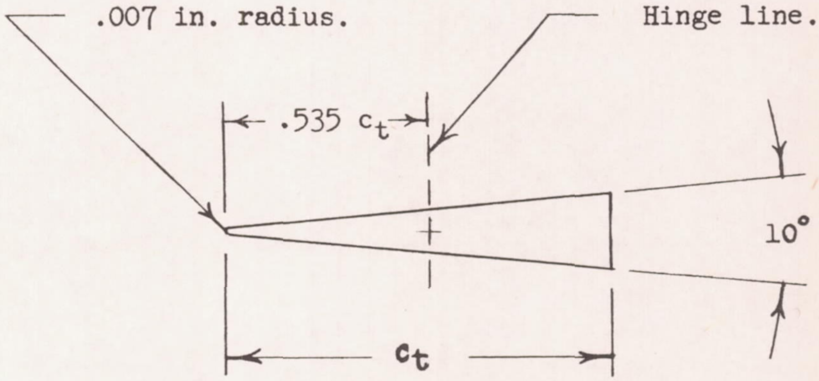


Figure 3.- Wind-tunnel model; all dimensions in inches.

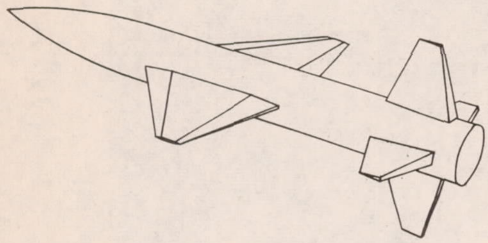


(a) Wing.

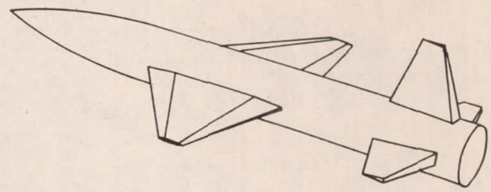


(b) Horizontal and vertical tails.

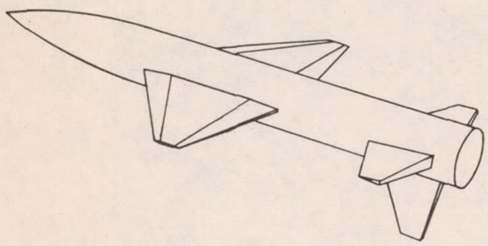
Figure 4.- Wing and tail airfoil sections used on model.



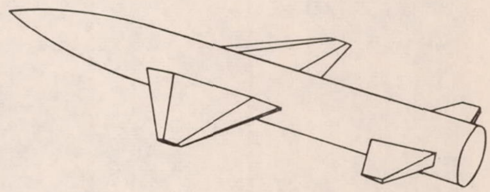
(a) Complete model.



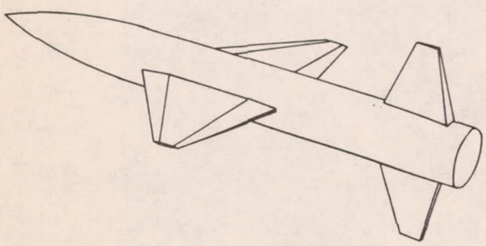
(b) Horizontal-tail and top-vertical-tail configuration.



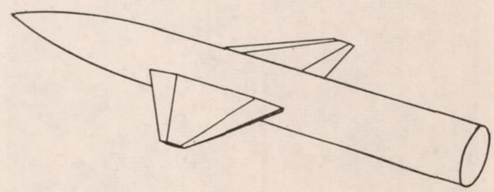
(c) Horizontal-tail and bottom-vertical-tail configuration.



(d) Horizontal-tail configuration.



(e) Vertical-tail configuration.



(f) Body-wing configuration.

Figure 5.- Perspective drawings of various configurations tested.

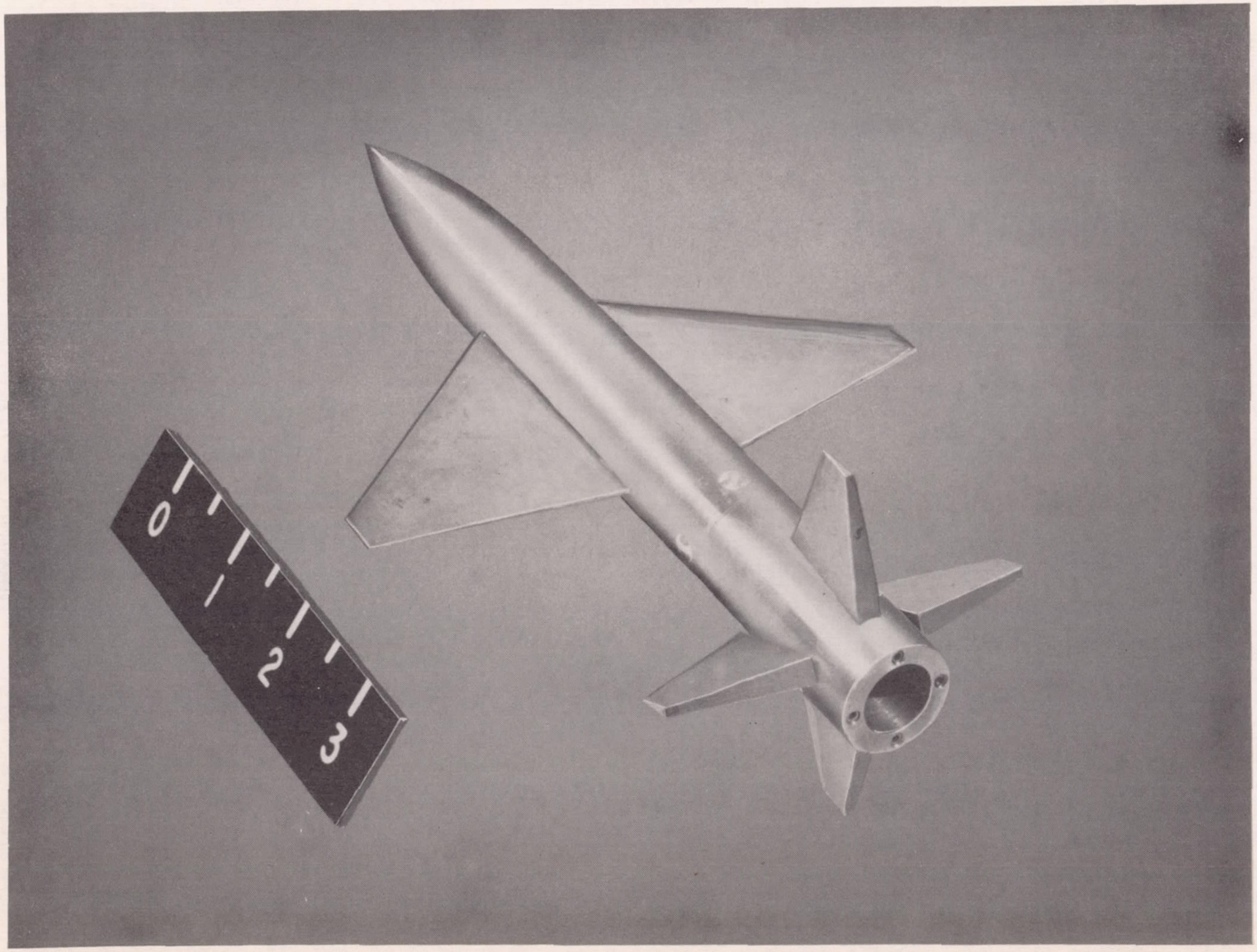


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Figure 6.- Photograph of complete model showing method of attachment of tail surfaces. $i_H = -20^{\circ}$.

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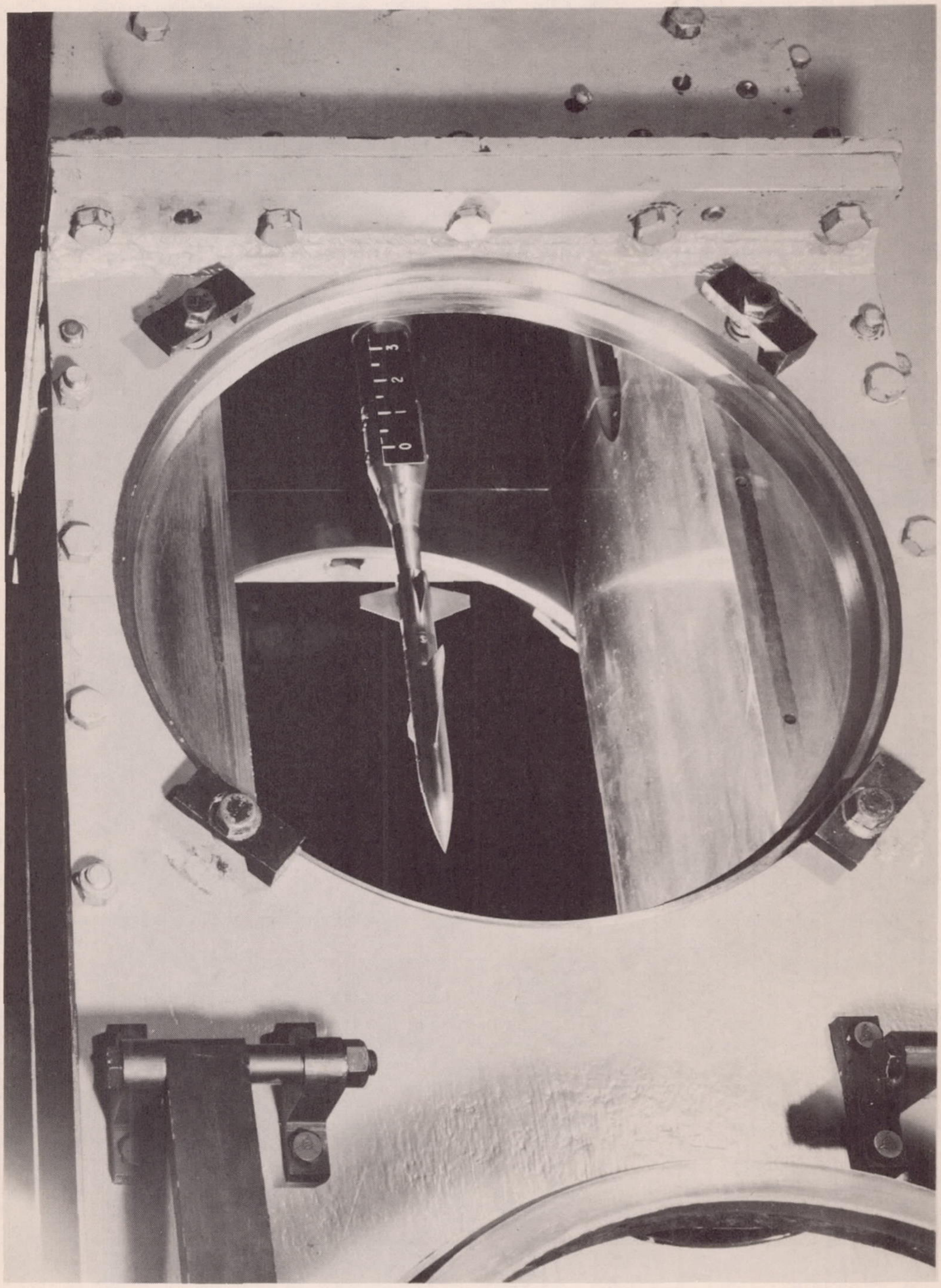

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Figure 7.- Installation of model in the Langley 11-inch hypersonic tunnel.

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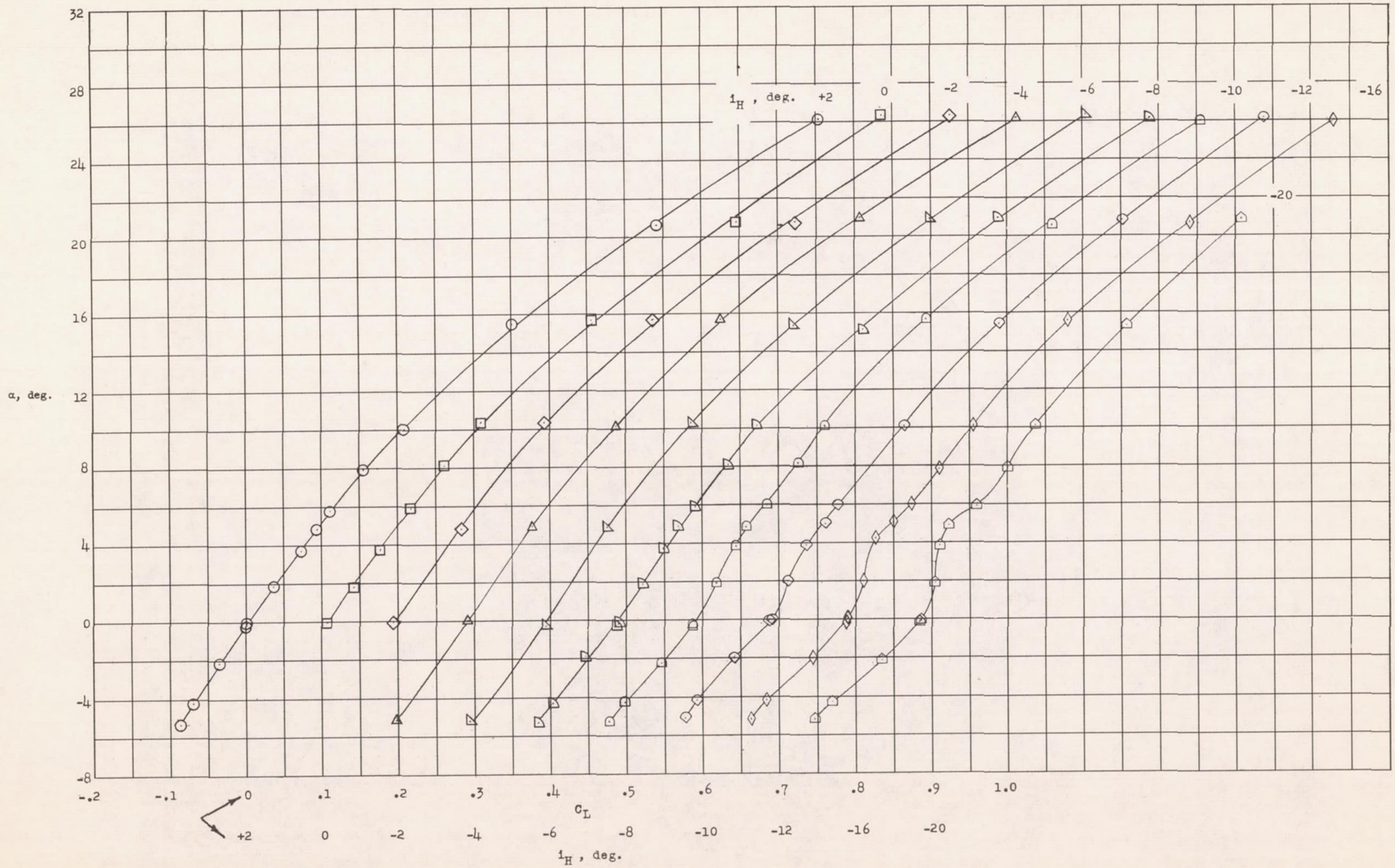

Figure 8.- Variation of angle of attack with lift coefficient for complete model. M = 6.86; R = 343,000; stability-axis data. The zero axis for each curve is indicated by the values of i_H below the C_L scale.

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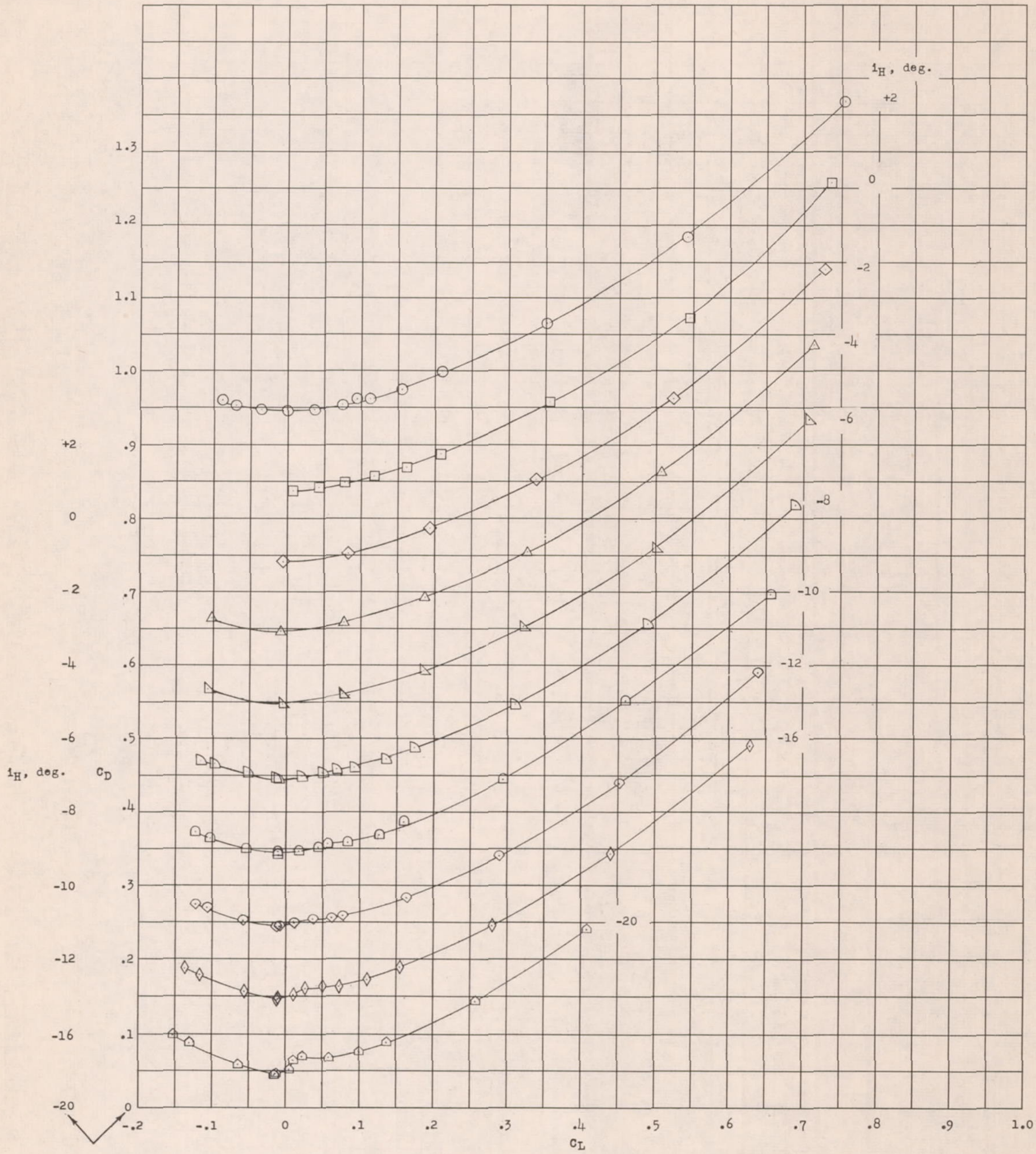

Figure 9.- Variation of drag coefficient with lift coefficient for complete model. M = 6.86; R = 343,000; stability-axis data. The zero axis for each curve is indicated by the values of i_H to the left of the C_D scale.

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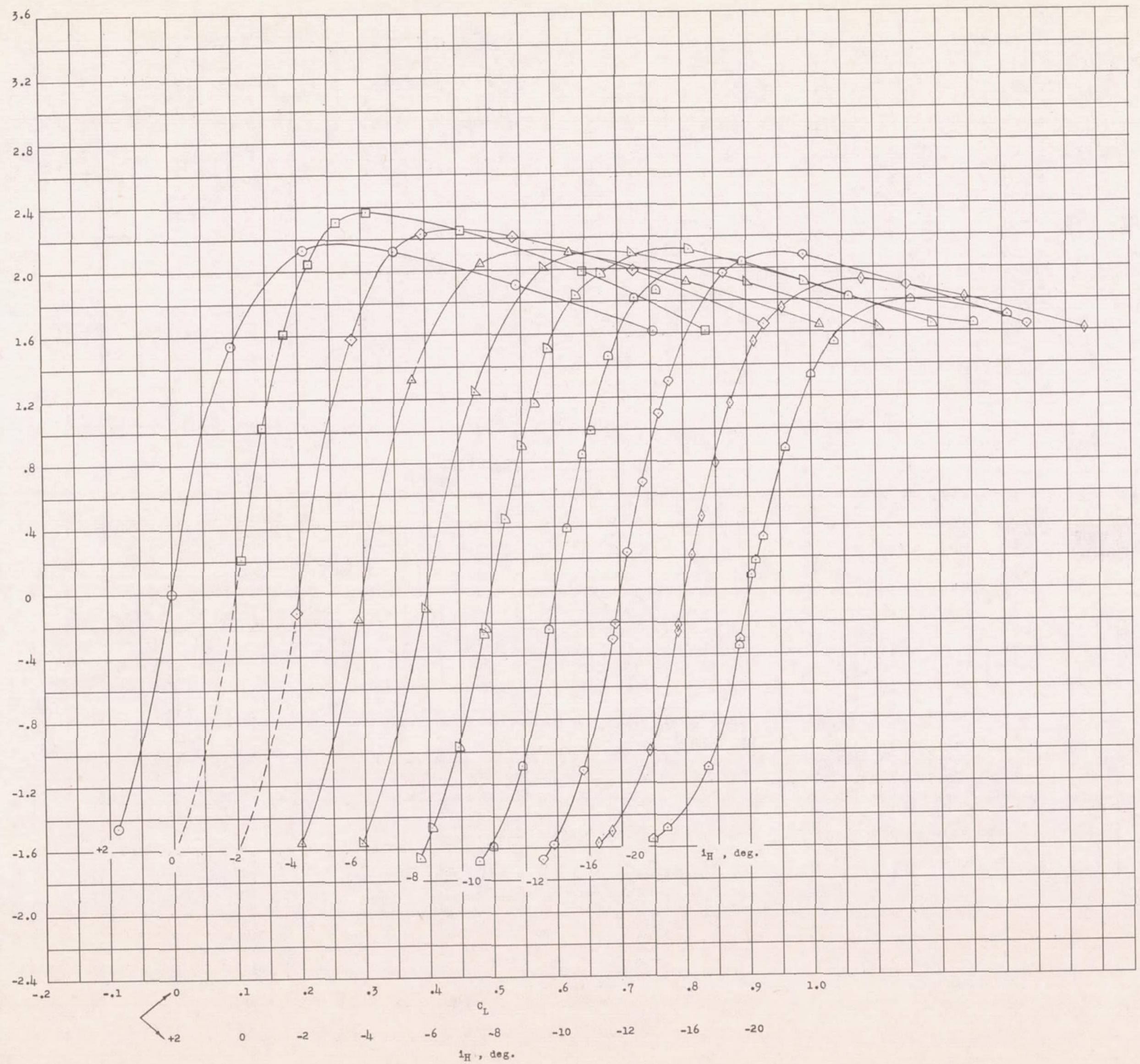

Figure 10.- Variation of lift-drag ratio with lift coefficient for complete model. M = 6.86; R = 343,000; stability-axis data. The zero axis for each curve is indicated by the values of i_H below the C_L scale.

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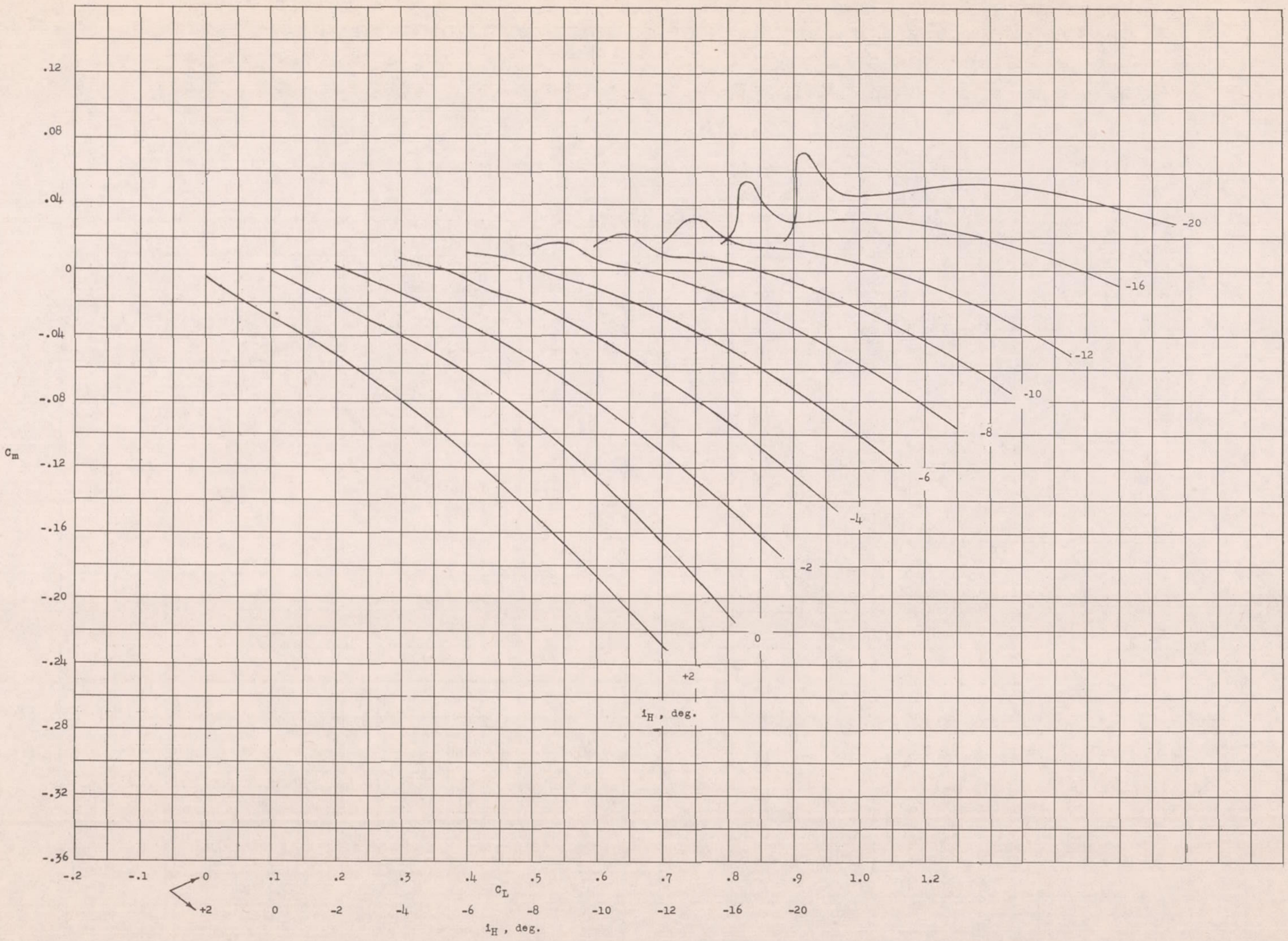

Figure 11.- Variation of pitching-moment coefficient with lift coefficient for complete model. M = 6.86; R = 343,000; stability-axis data. The zero axis for each curve is indicated by the values of i_H below the C_L scale.

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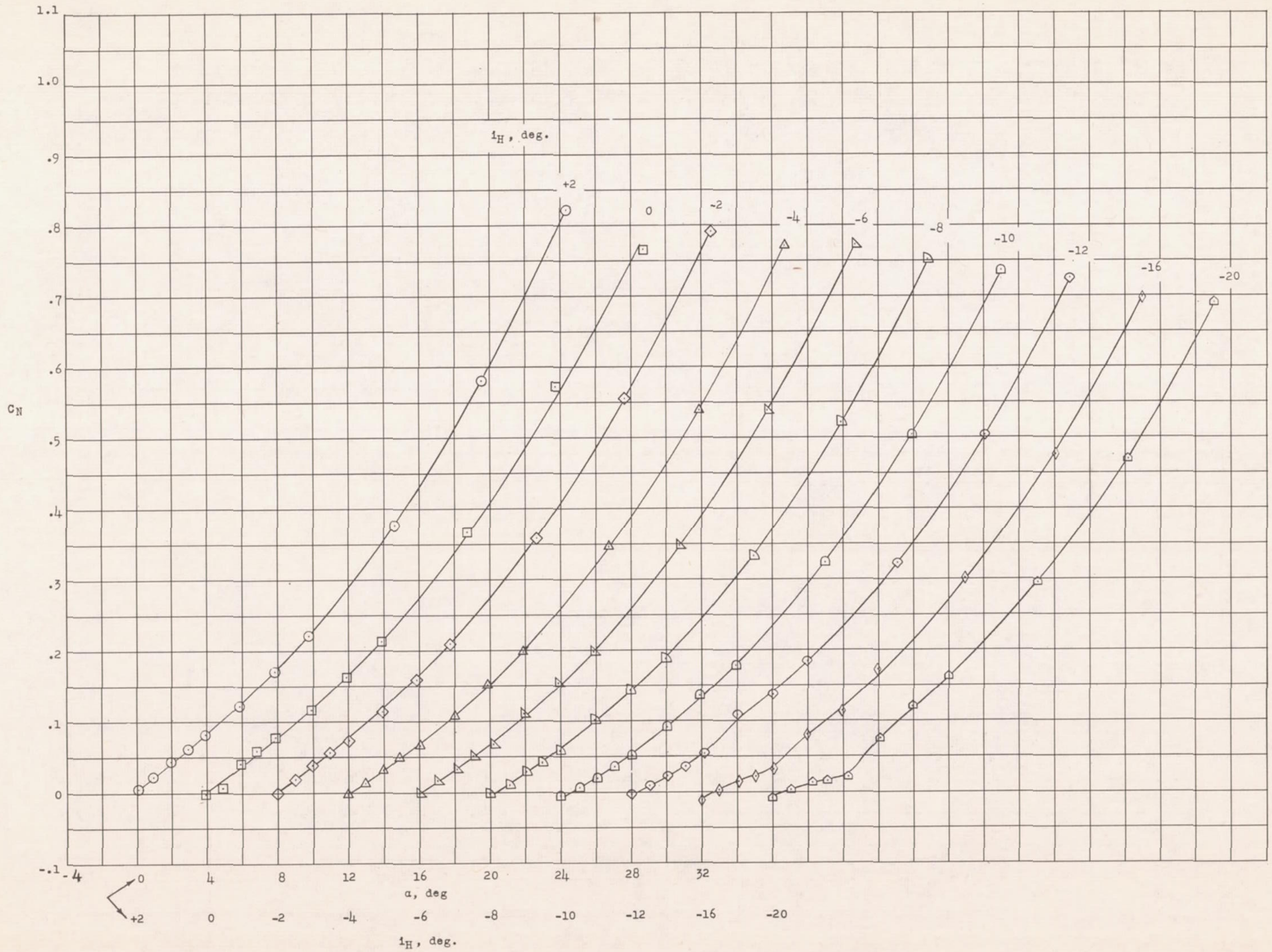

Figure 12.- Variation of normal-force coefficient with angle of attack for complete model. M = 6.86; R = 343,000; body-axis data. The zero axis for each curve is indicated by the values of i_H below the α scale.

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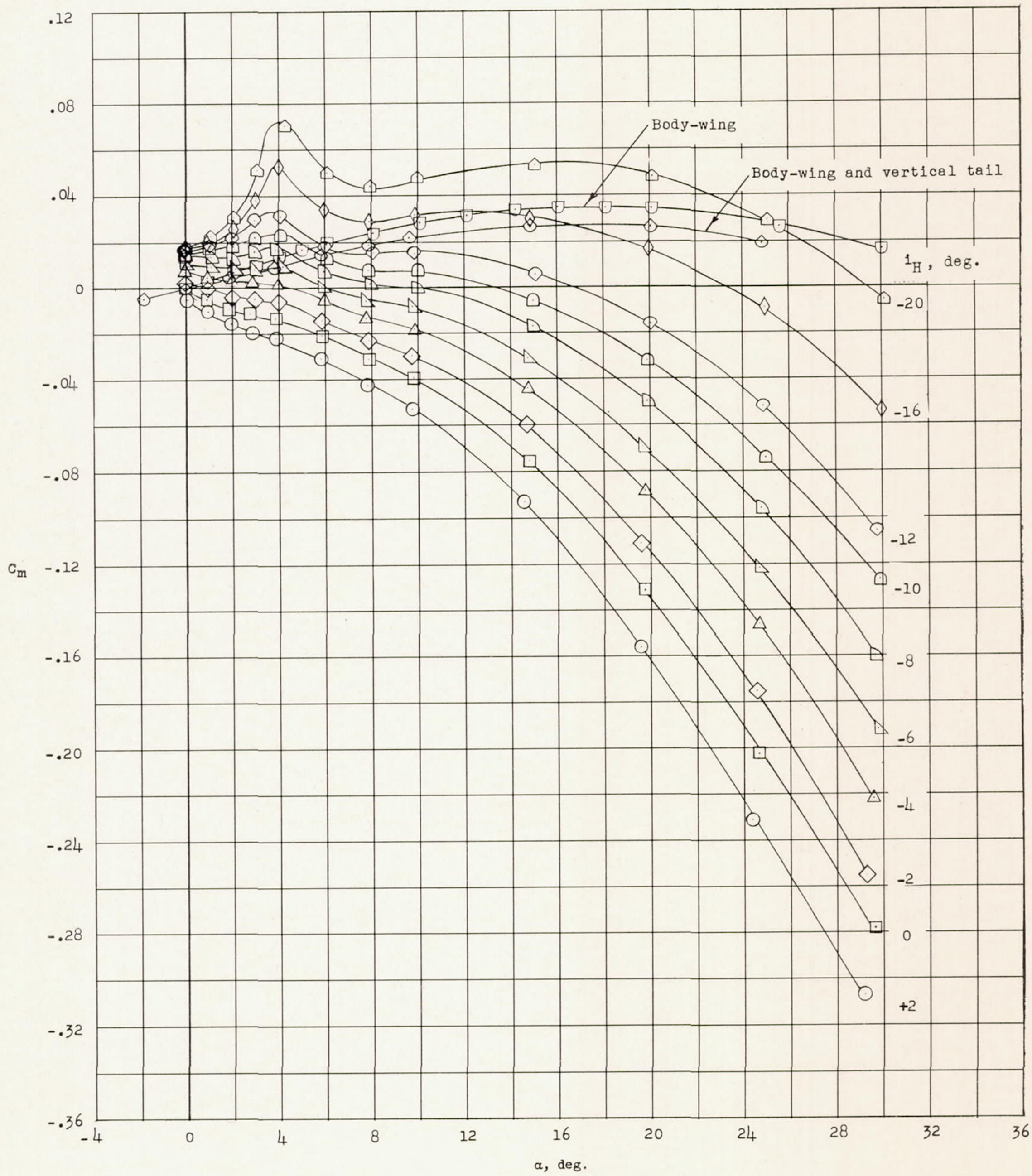


Figure 13.- Variation of pitching-moment coefficient with angle of attack for complete model and for body-wing and body-wing-vertical tail configurations. M = 6.86; R = 343,000.

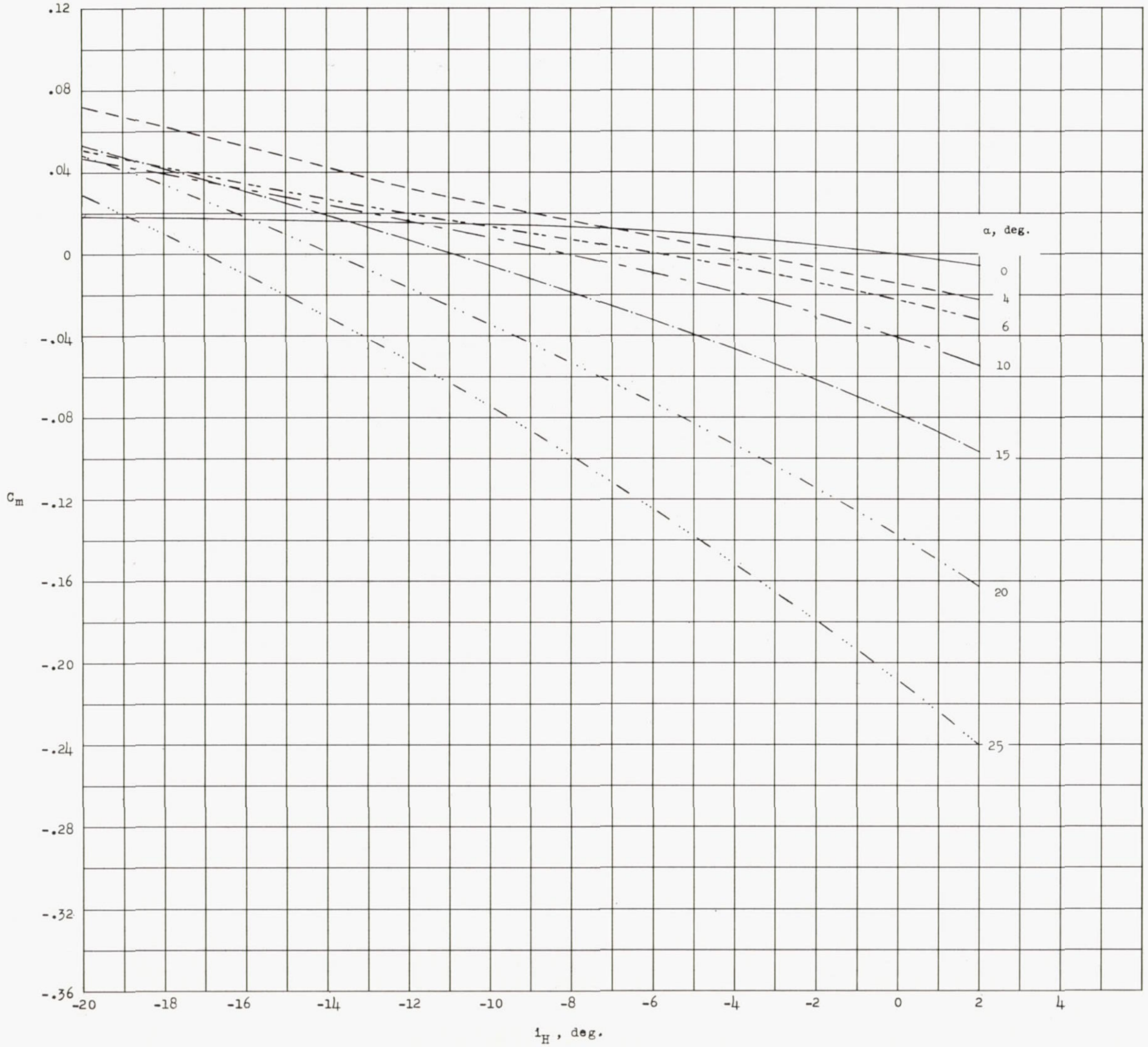


Figure 14.- Variation of pitching-moment coefficient with horizontal-tail incidence angle for complete model. M = 6.86; R = 343,000.

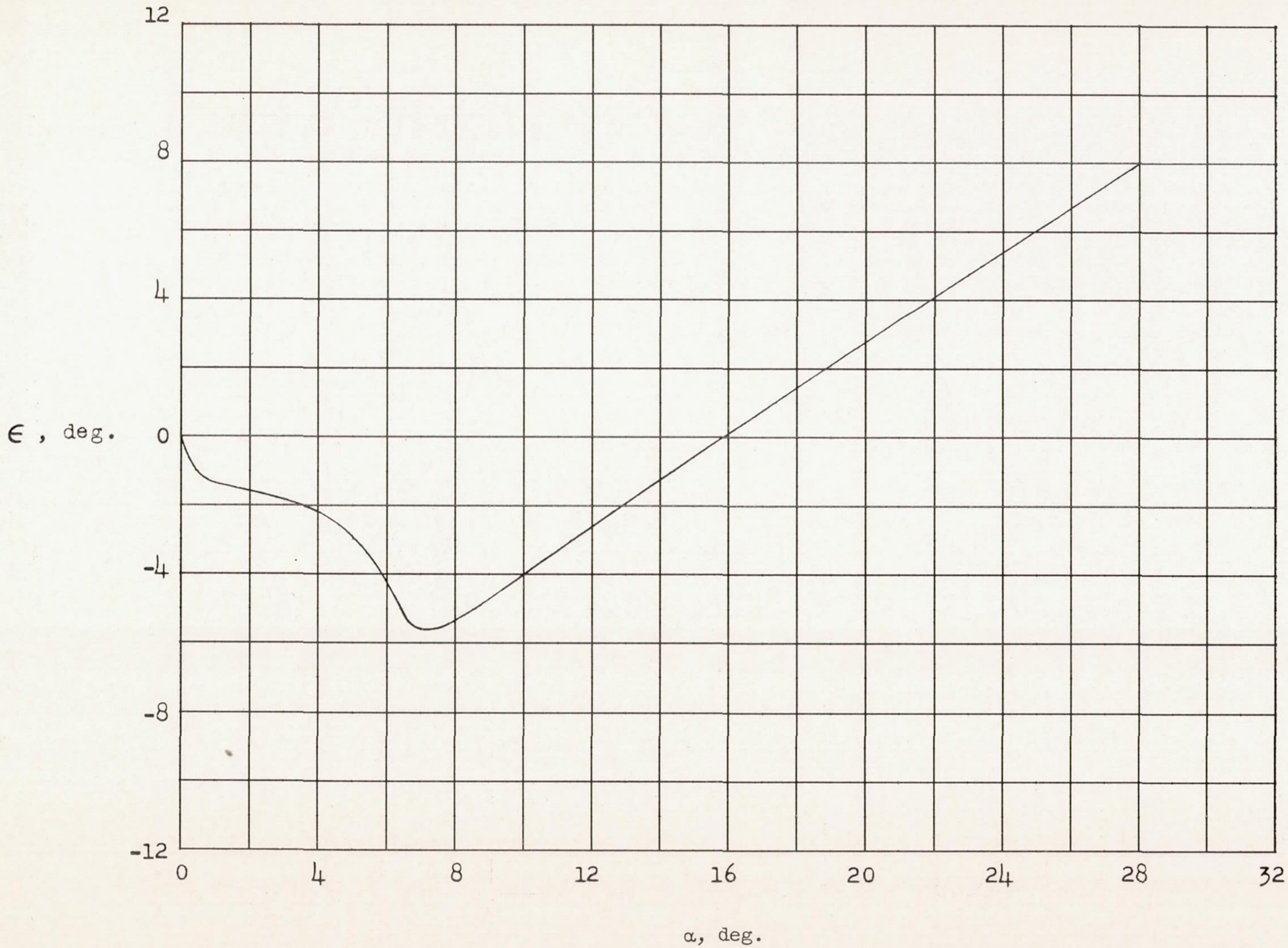


Figure 15.- Variation of effective downwash angle with angle of attack for complete model. $M = 6.86$; $R = 343{,}000$.

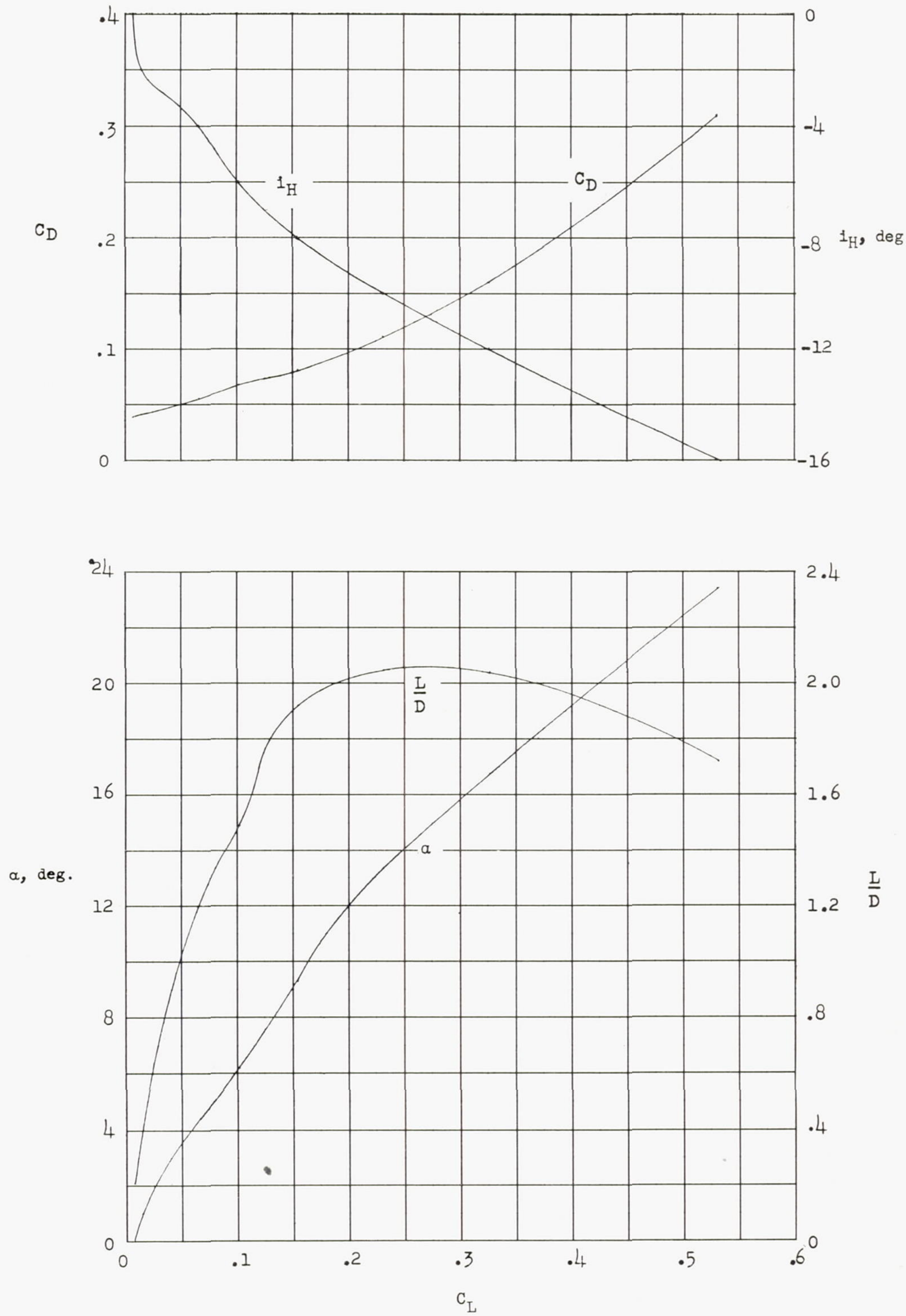


Figure 16.- Longitudinal characteristics for trim for complete model. $C_m = 0$; $M = 6.86$; $R = 343,000$; stability-axis data.

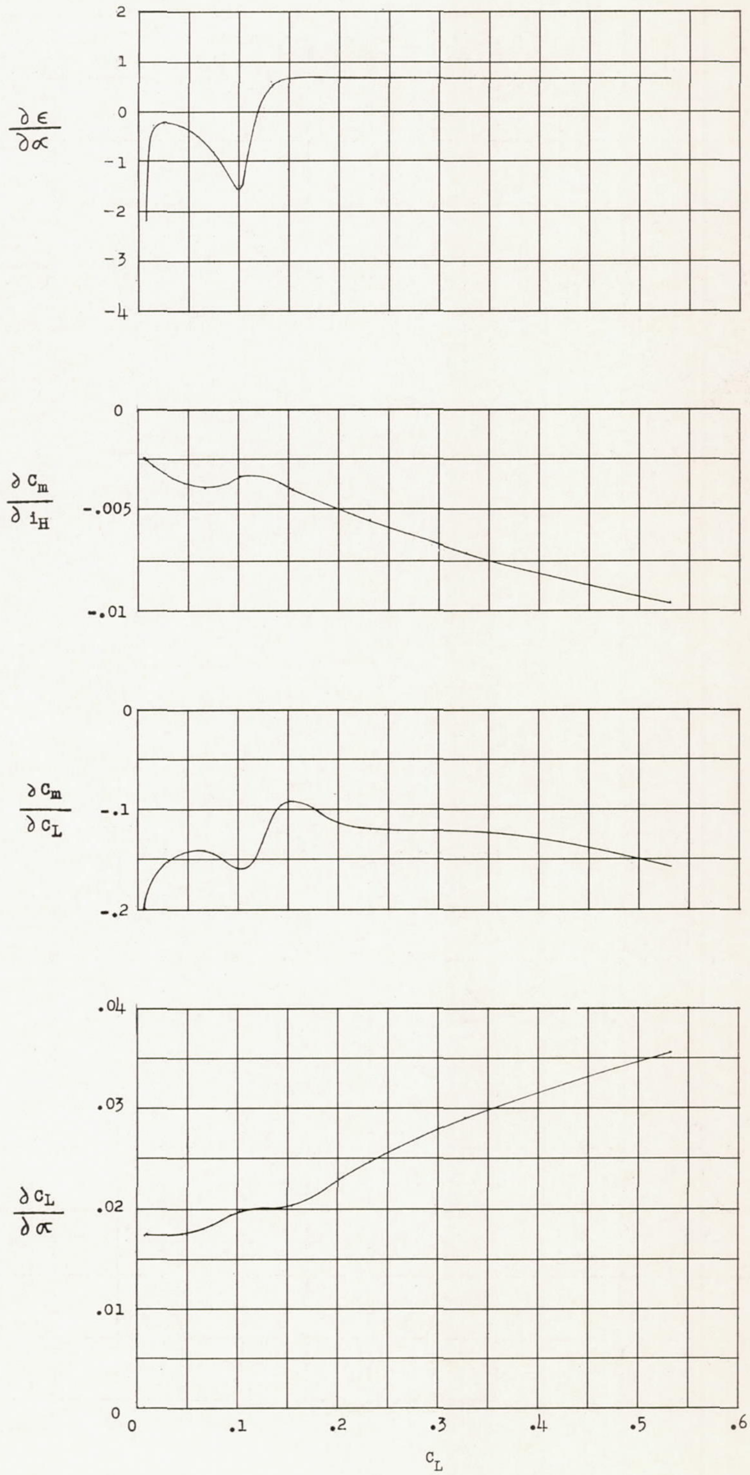
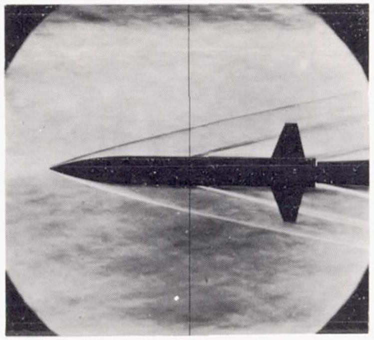
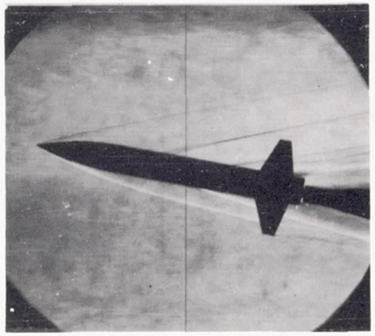


Figure 17.- Longitudinal stability parameters for trim for complete model. $C_m = 0$; M = 6.86; R = 343,000; stability-axis data.



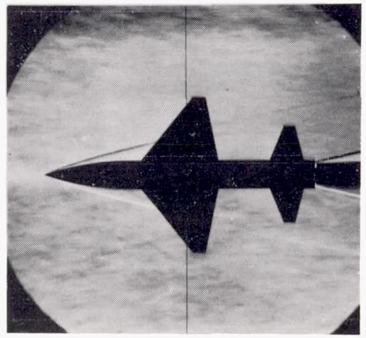
Complete model

$\alpha = 1^\circ$ $\beta = 0^\circ$
$i_H = 0^\circ$ $i_V = 0^\circ$



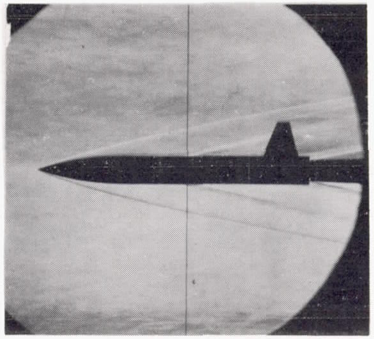
Complete model trimmed

$\alpha = 10^\circ$ $\beta = 0^\circ$
$i_H = 8^\circ$ $i_V = 0^\circ$



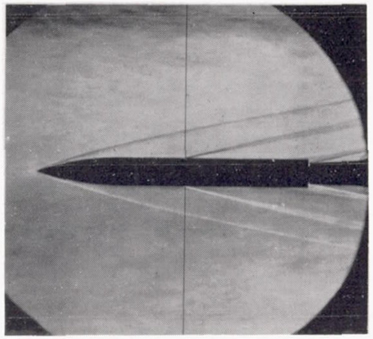
Complete model

$\alpha = 0^\circ$ $\beta = 0^\circ$
$i_H = 0^\circ$ $i_V = 0^\circ$



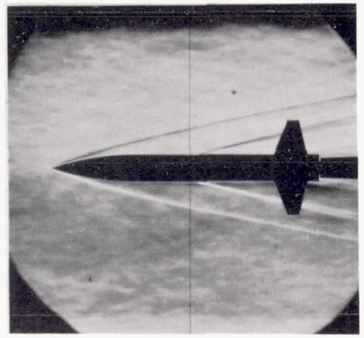
Horizontal-tail and top-vertical-tail configuration

$\alpha = 0^\circ$ $\beta = 1^\circ$
$i_H = 0^\circ$ $i_V = 0^\circ$



Horizontal-tail configuration

$\alpha = 0^\circ$ $\beta = 0^\circ$
$i_H = 0^\circ$

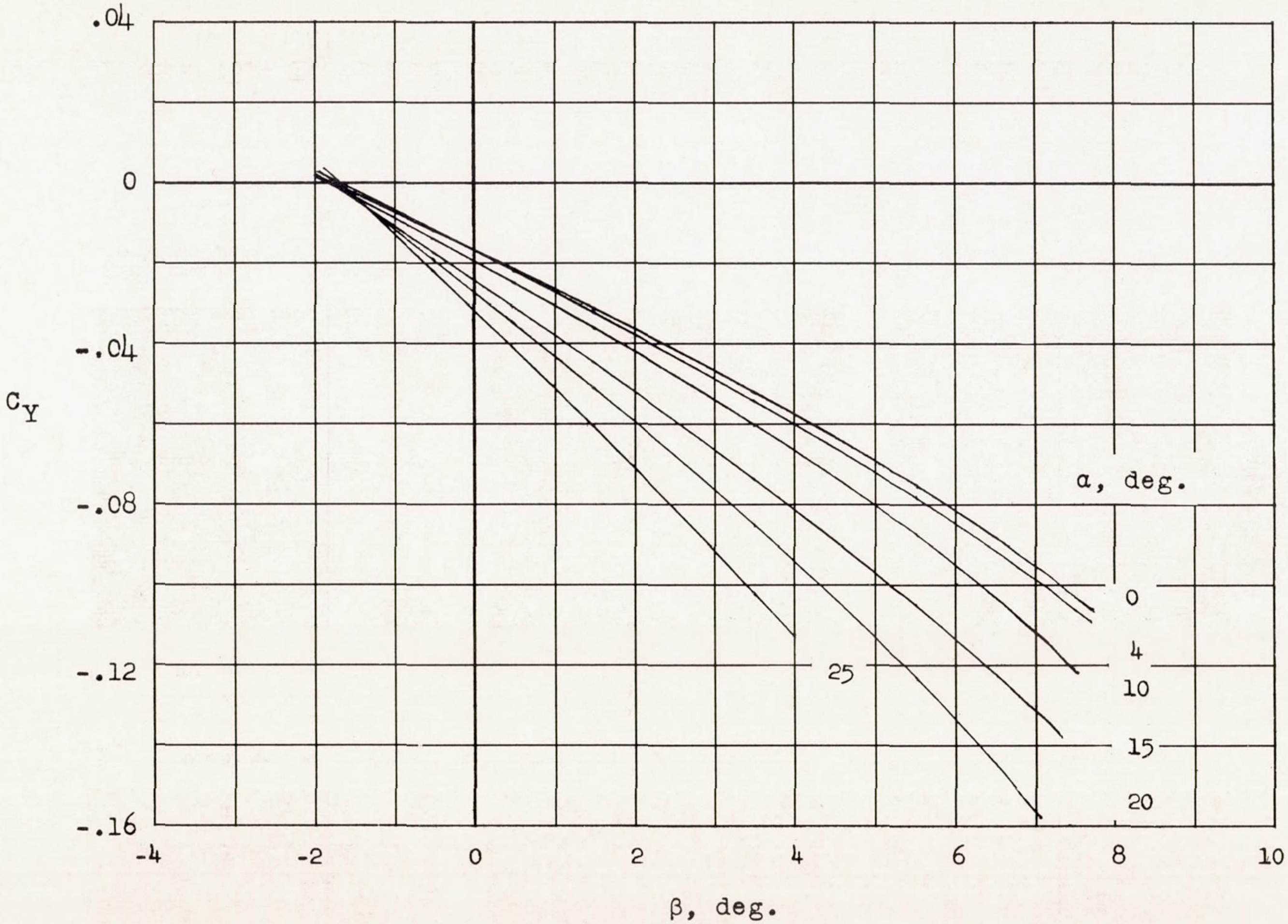


Vertical-tail configuration

$\alpha = 0^\circ$ $\beta = 0^\circ$
$i_V = 0^\circ$

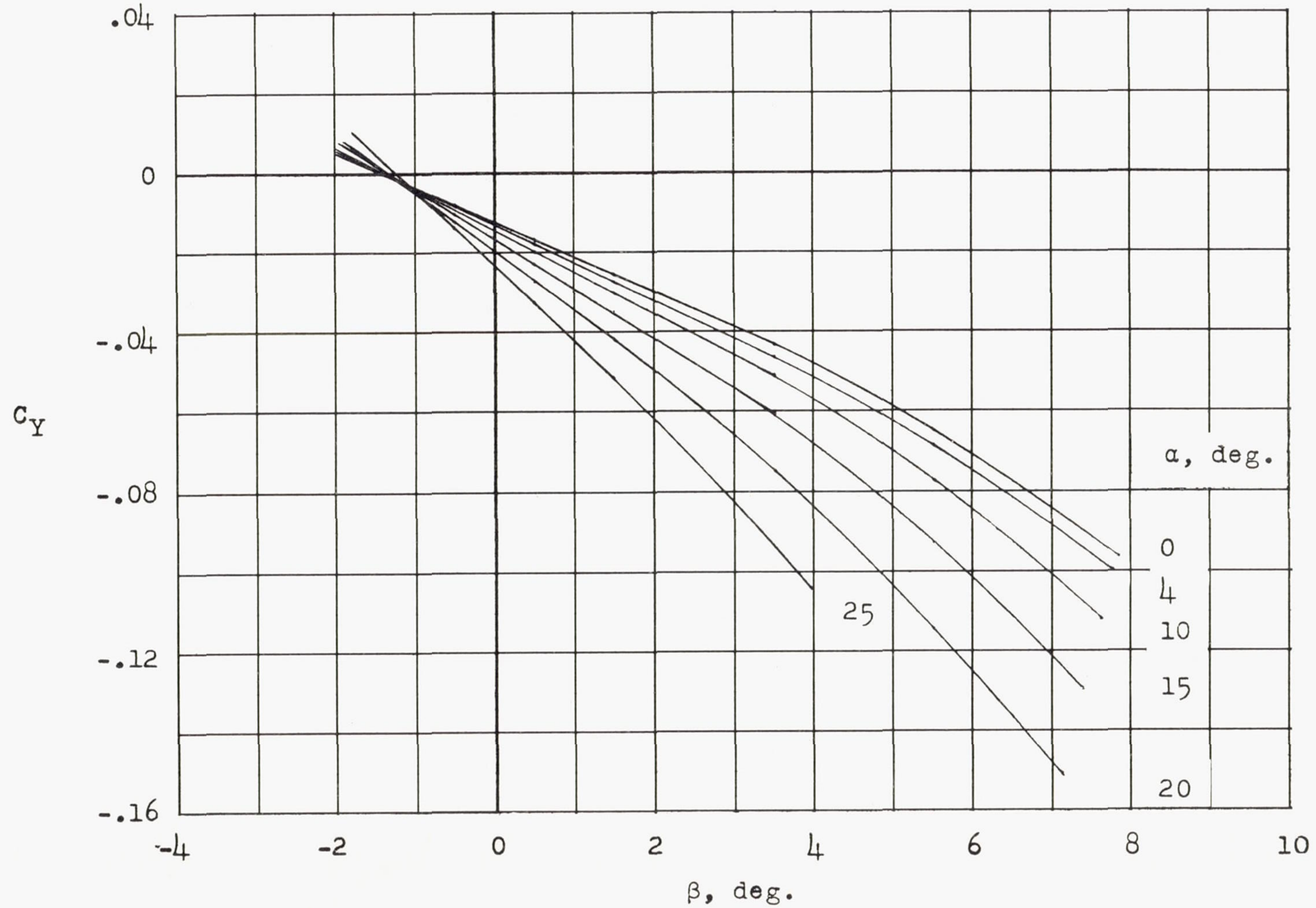
L-87908

Figure 18.- Typical schlieren photographs of complete model and various combinations of its tail surfaces. $M = 6.86$; $R = 343,000$.



(a) $i_V = -6$.

Figure 19.- Variation of lateral-force coefficient with sideslip angle for complete model. M = 6.86; R = 343,000; body-axis data.



(b) $i_V = -4$.

Figure 19.- Continued.

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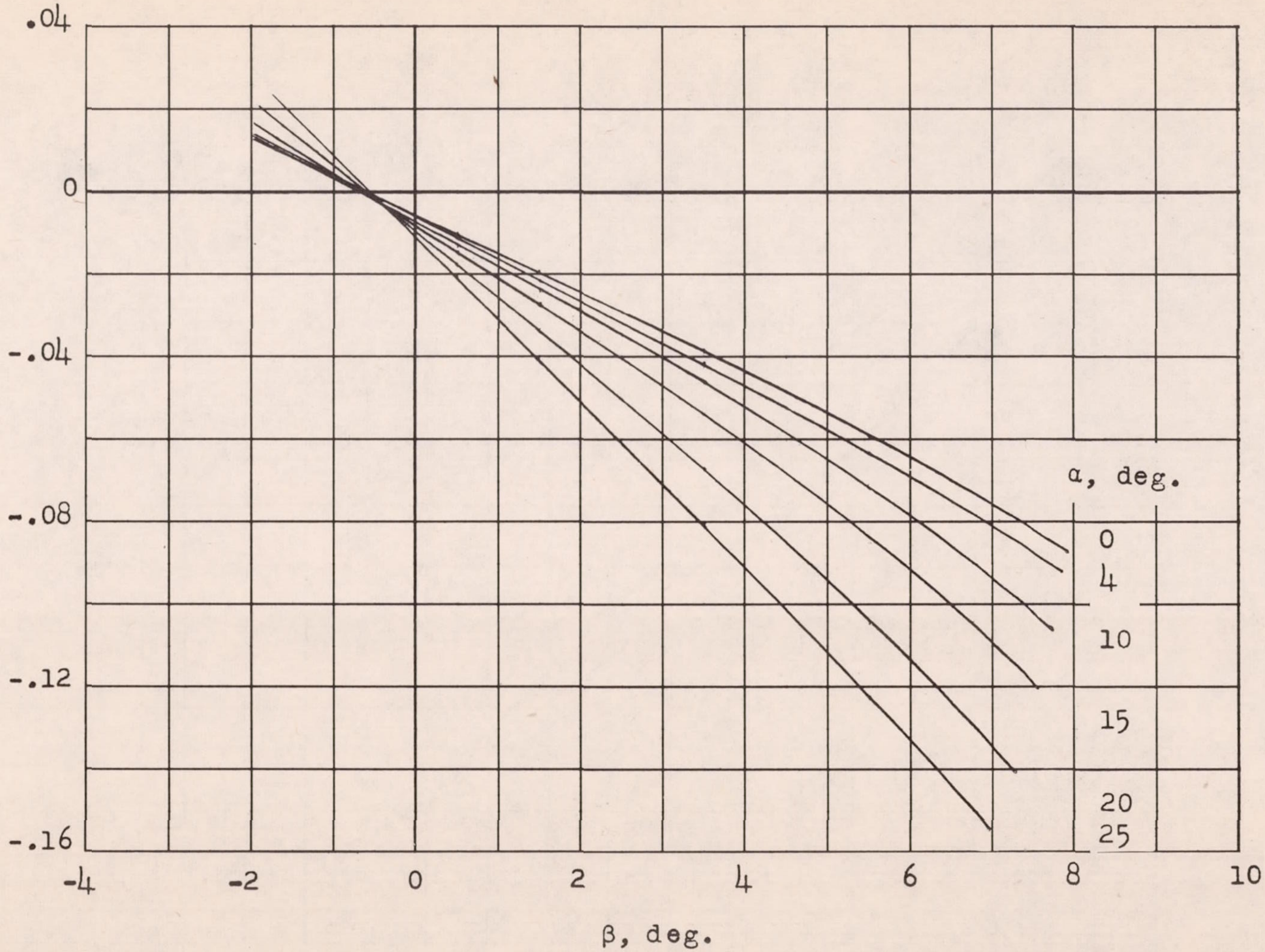

(c) $i_V = -2$.

Figure 19.- Continued.

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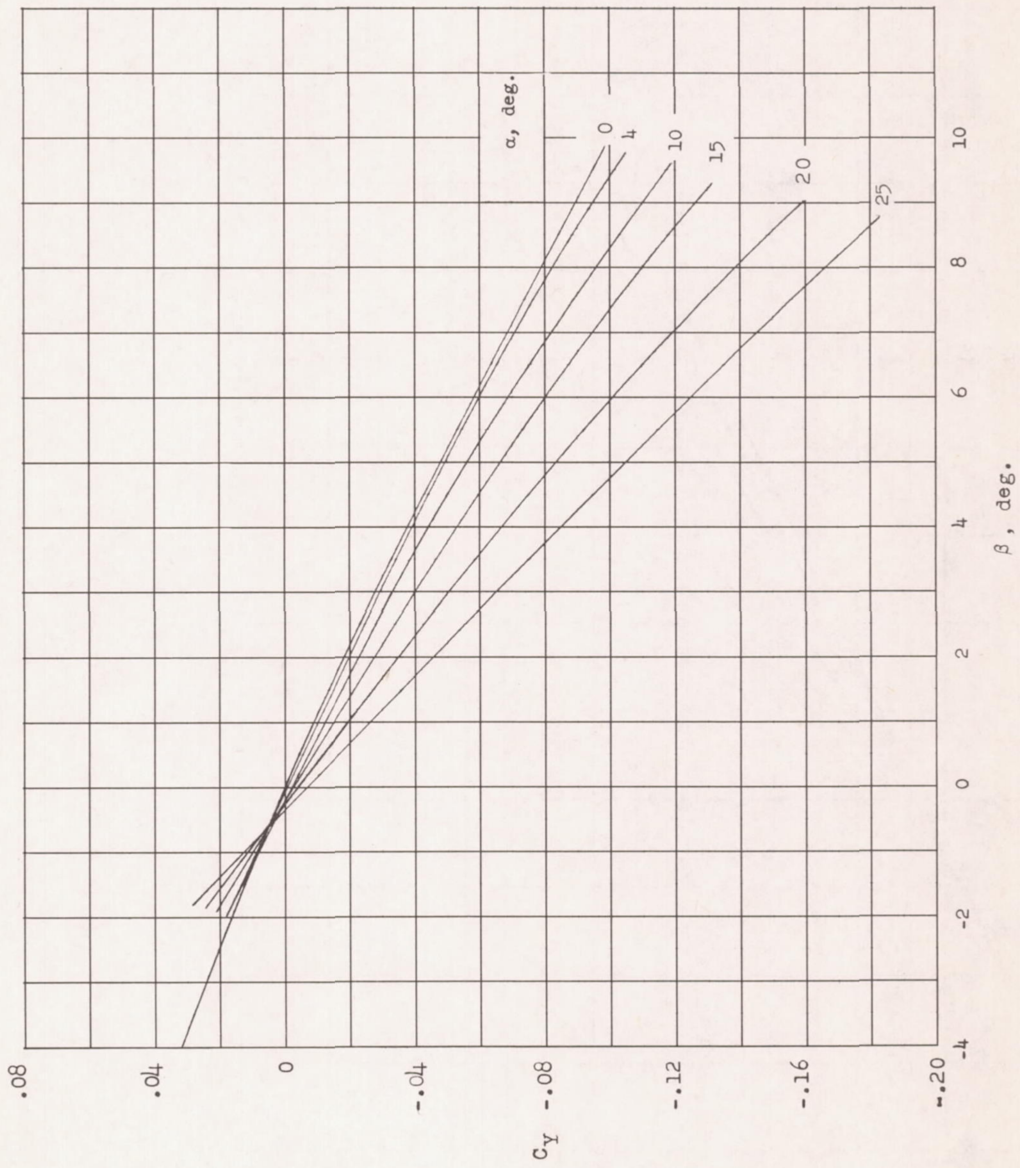
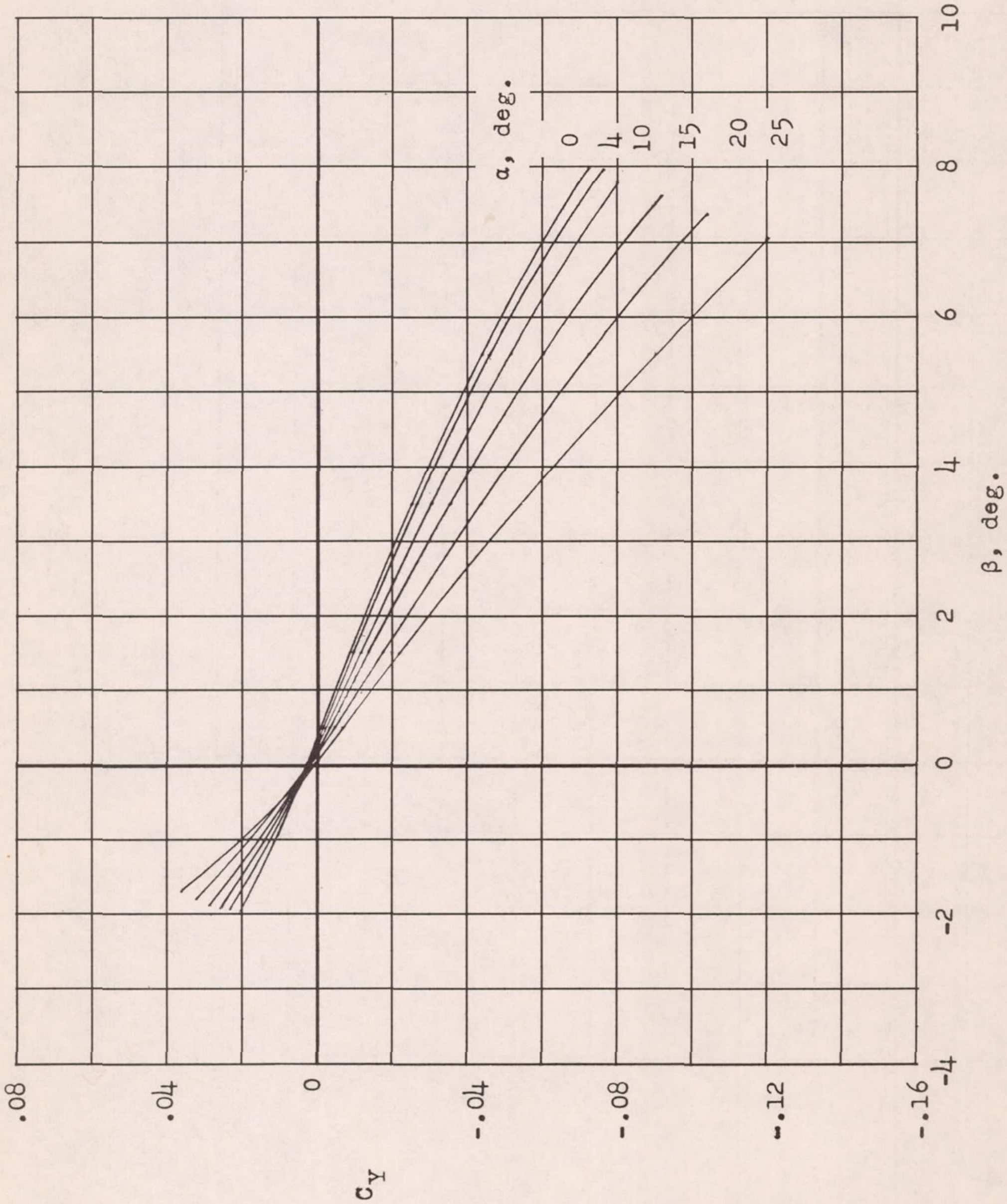


(d) $i_V = 0$.

Figure 19.- Continued.



(e) $i_V = 2$.

Figure 19.- Continued.

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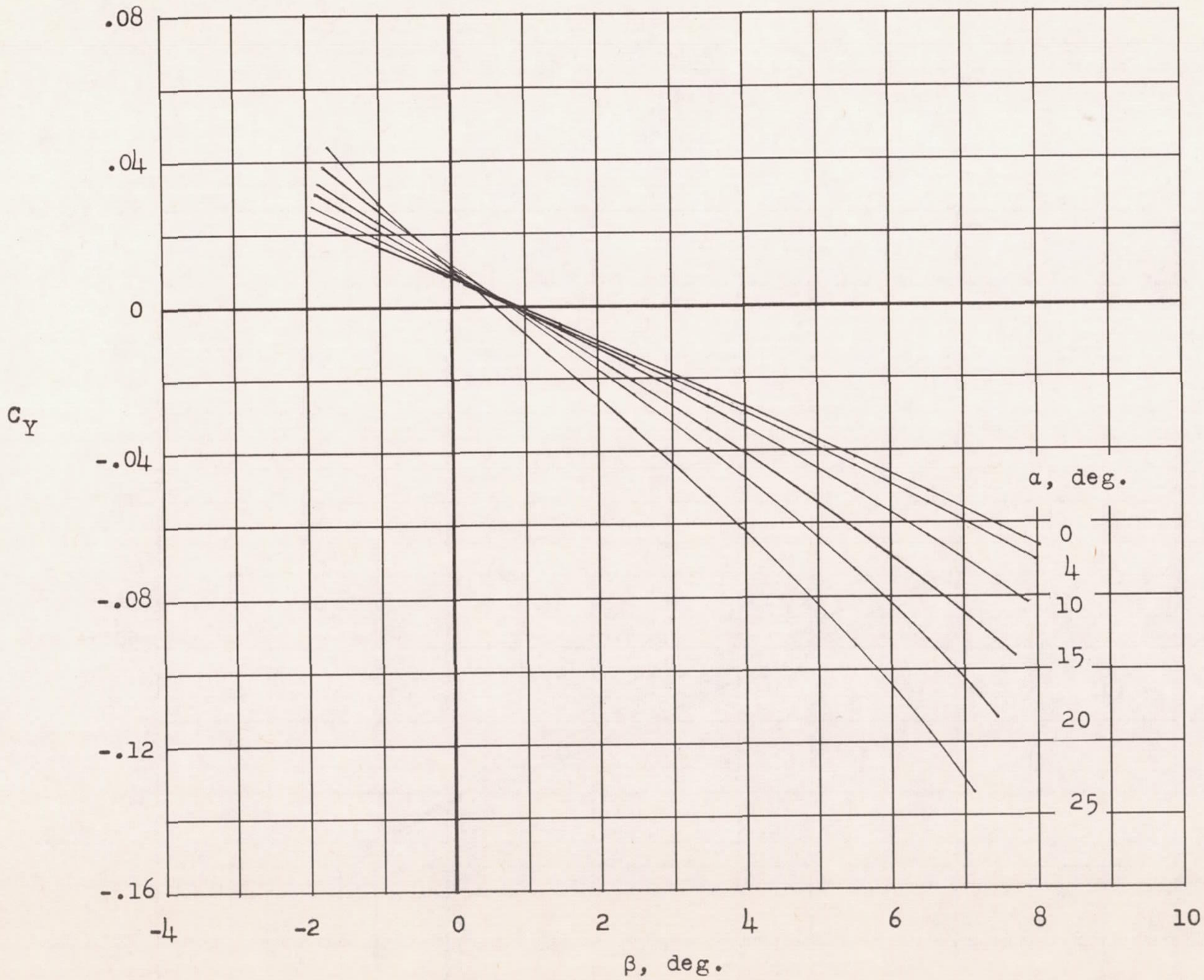

(f) $i_V = 4$.

Figure 19.- Continued.

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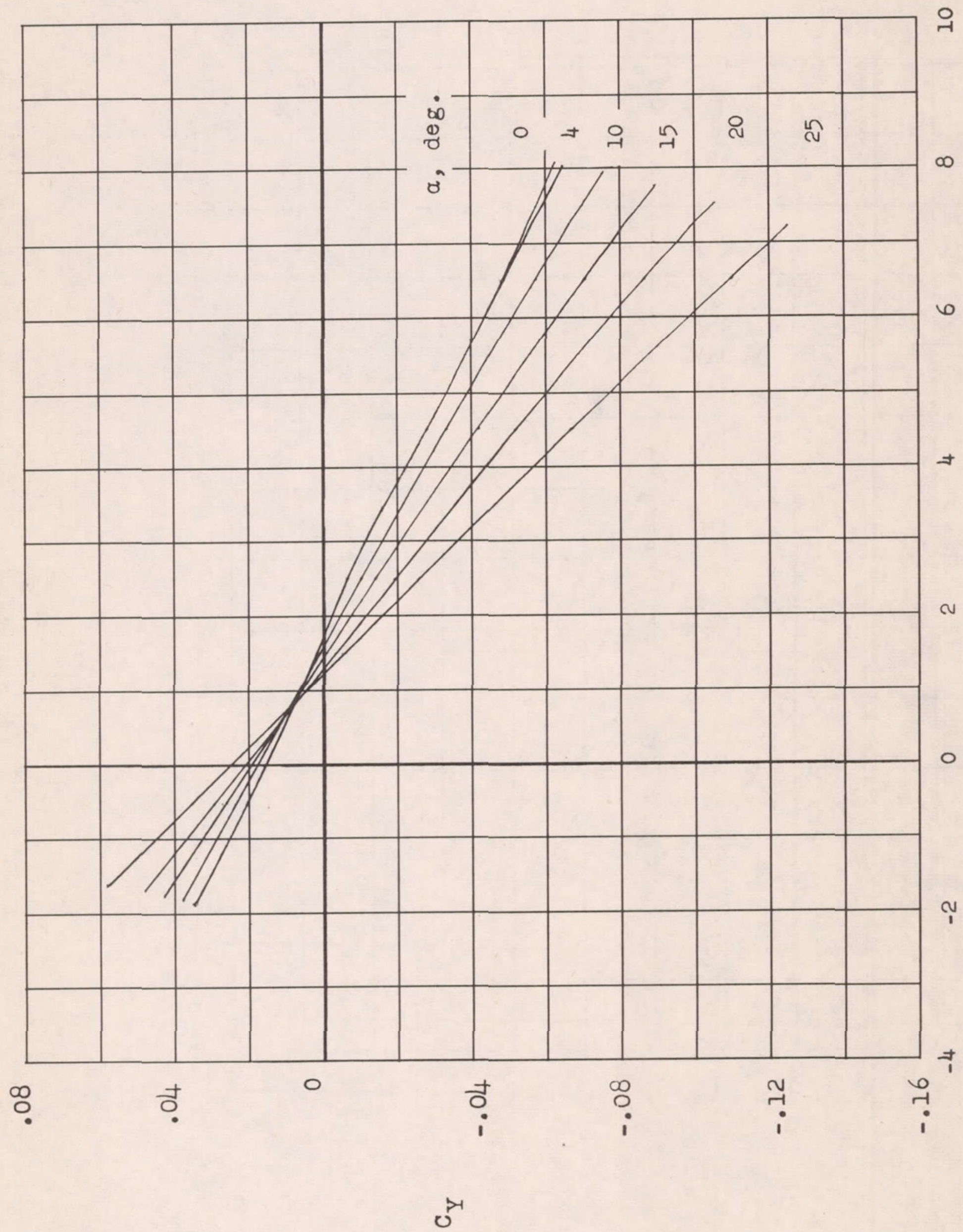

(g) $i_V = 6$.

Figure 19.- Concluded.

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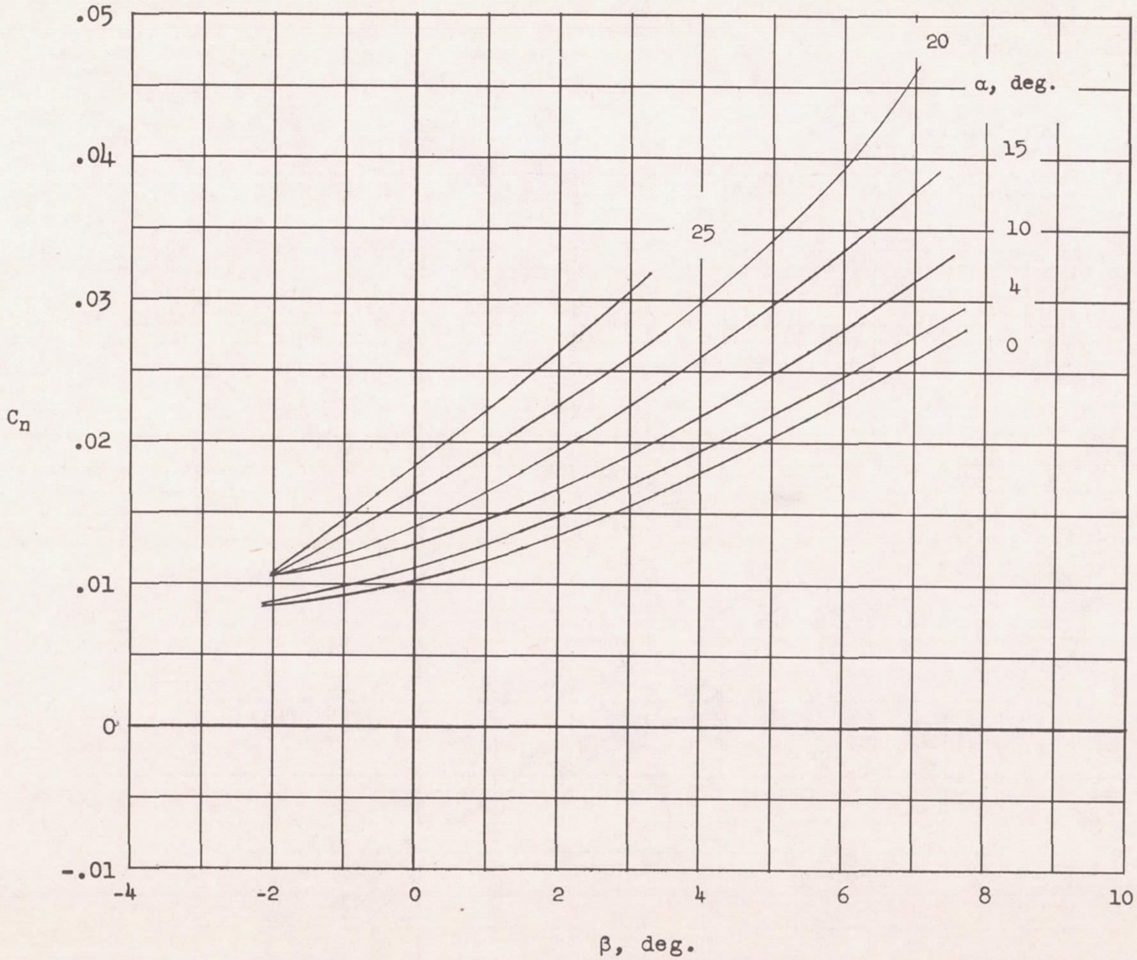

(a) $i_V = -6$.

Figure 20.- Variation of yawing-moment coefficient with sideslip angle for complete model. M = 6.86; R = 343,000; body-axis data.

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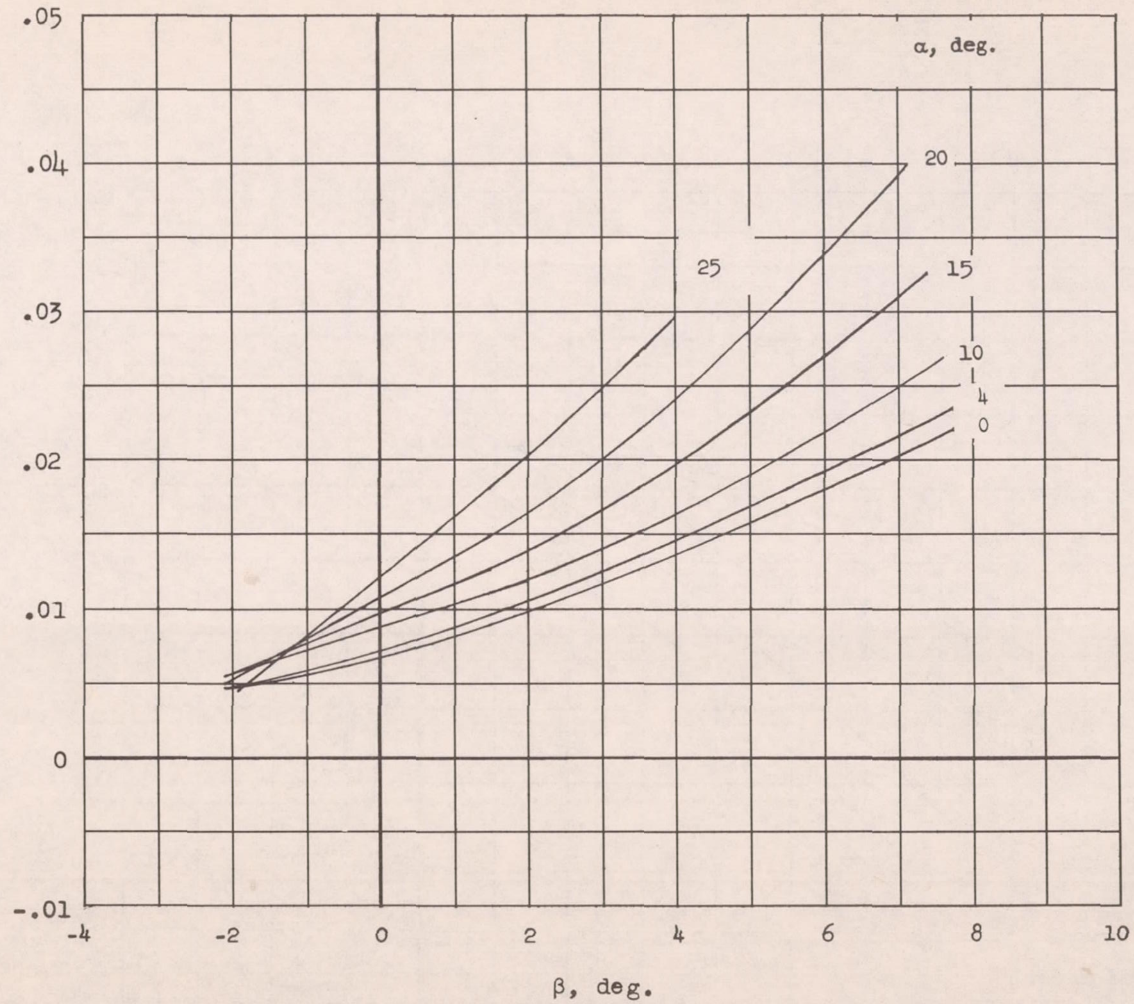
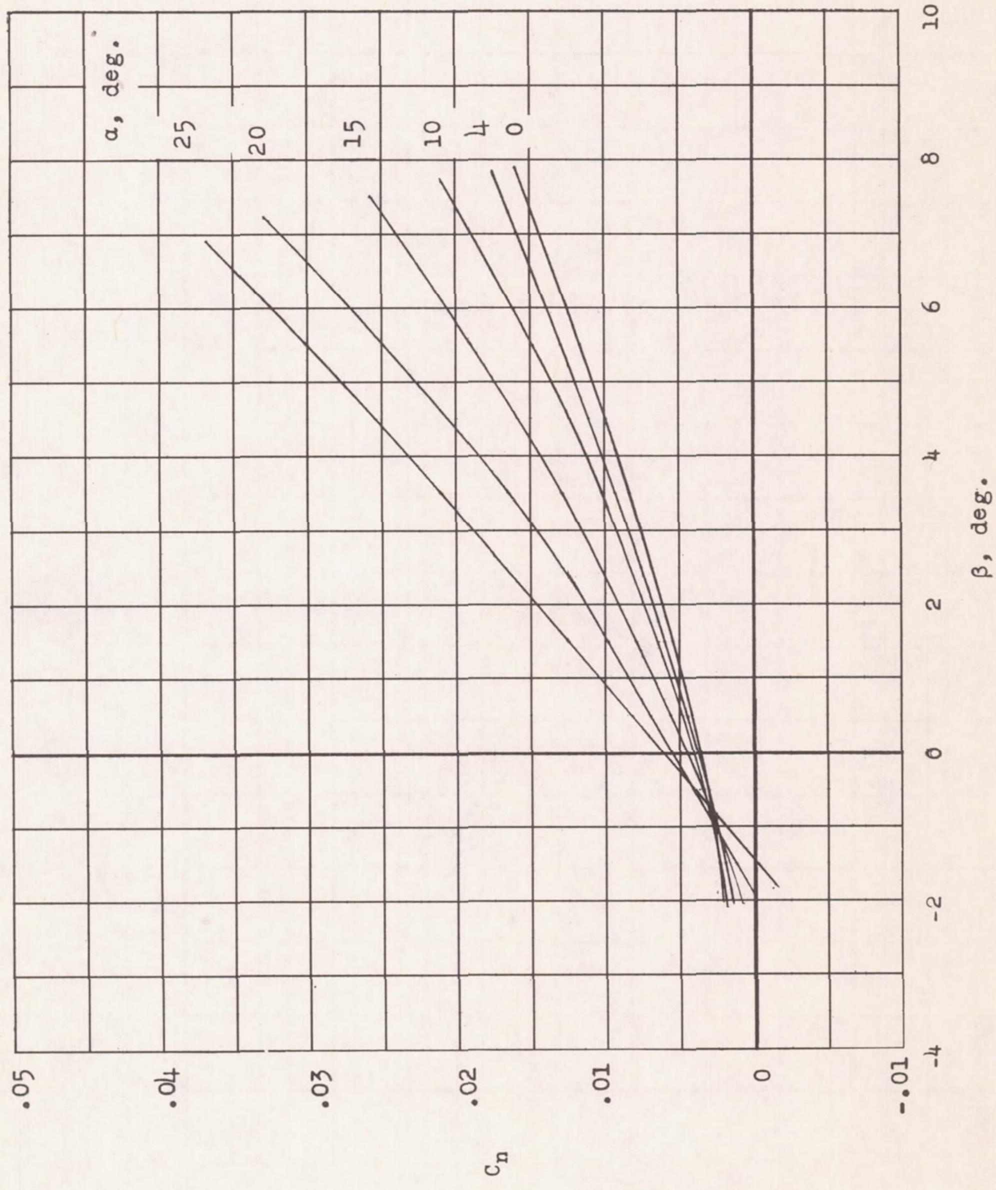


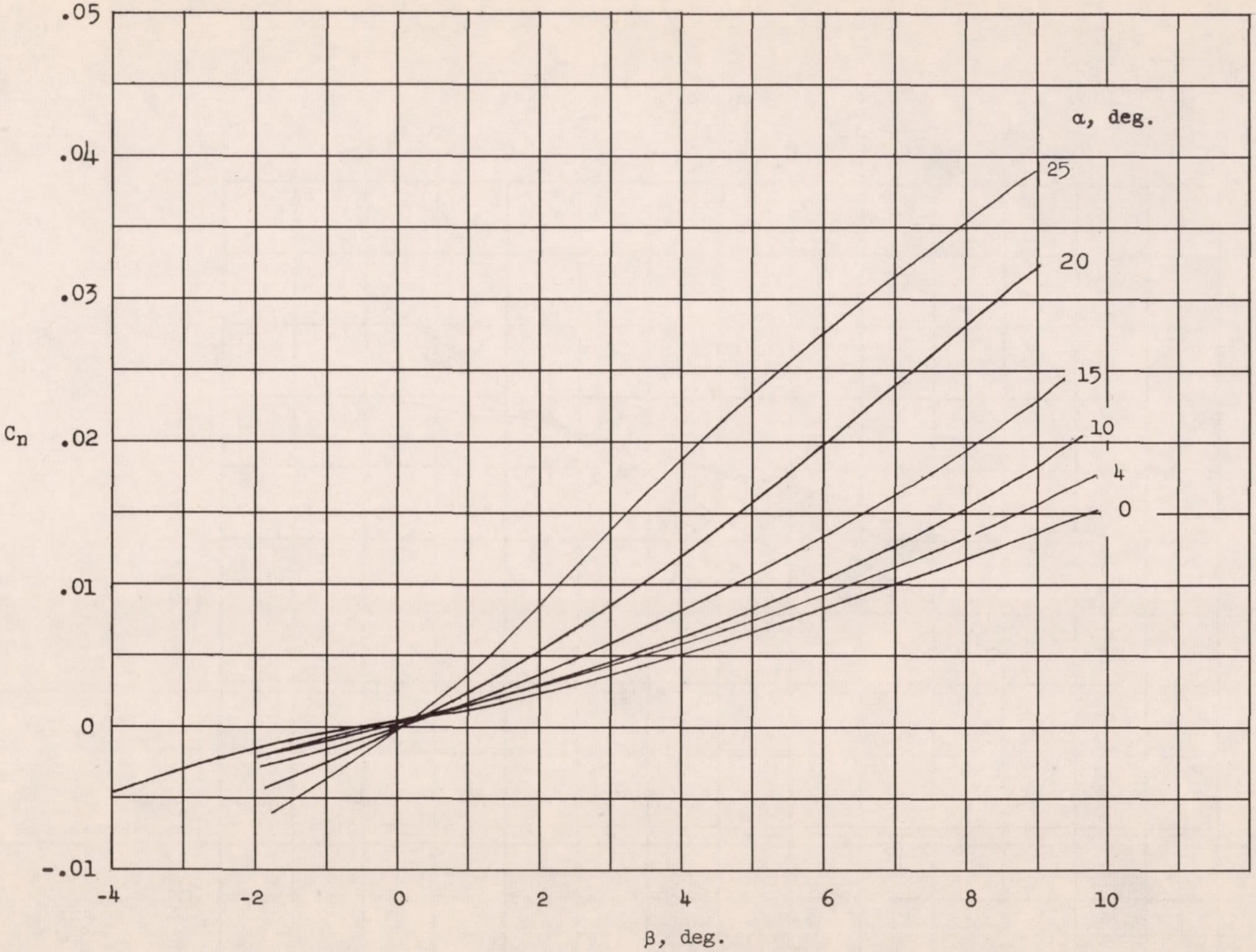
(b) $i_V = -4$.

Figure 20.- Continued.



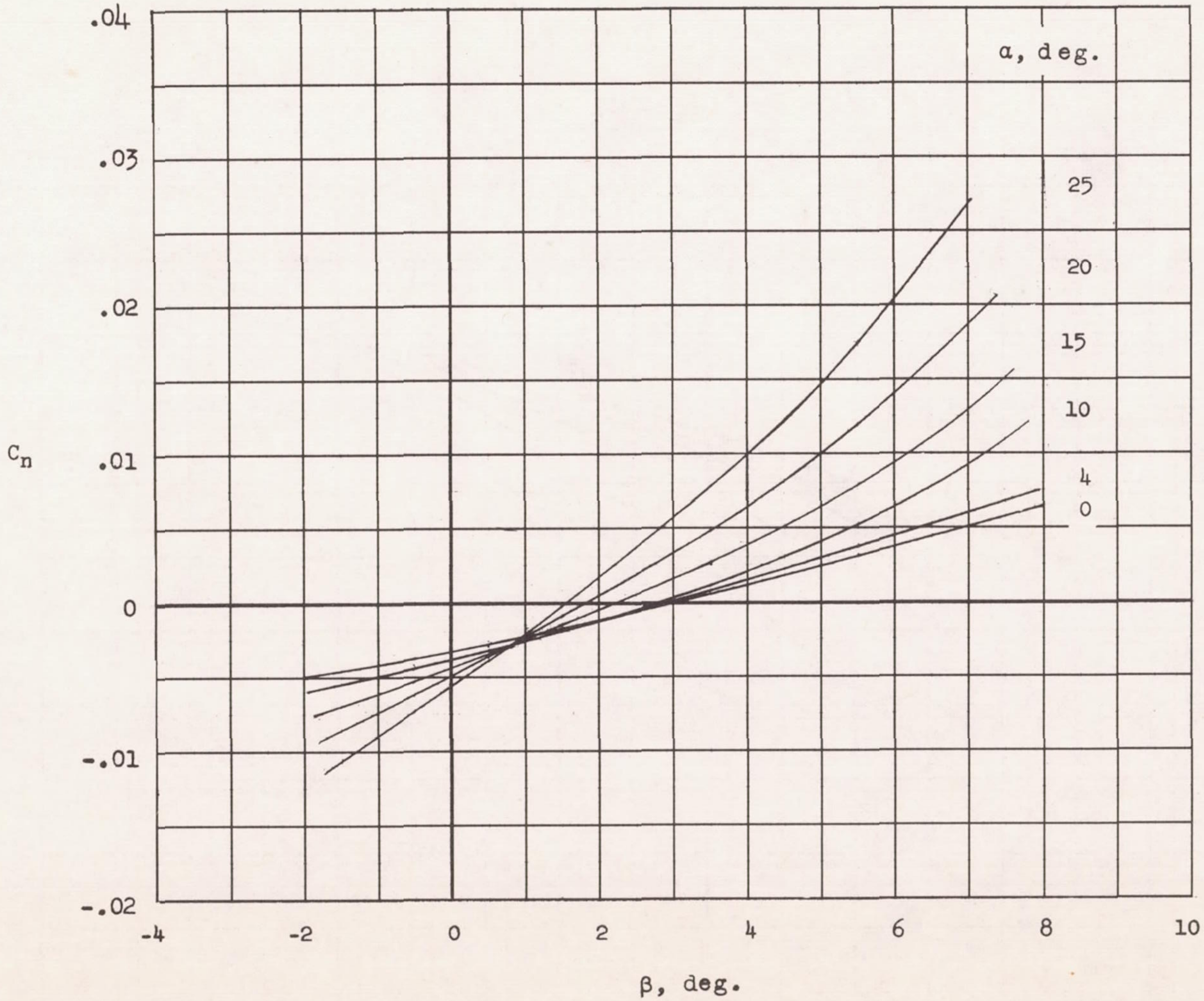
(c) $i_V = -2$.

Figure 20.- Continued.



(d) $i_V = 0$.

Figure 20.- Continued.



(e) $i_V = 2$.

Figure 20.- Continued.

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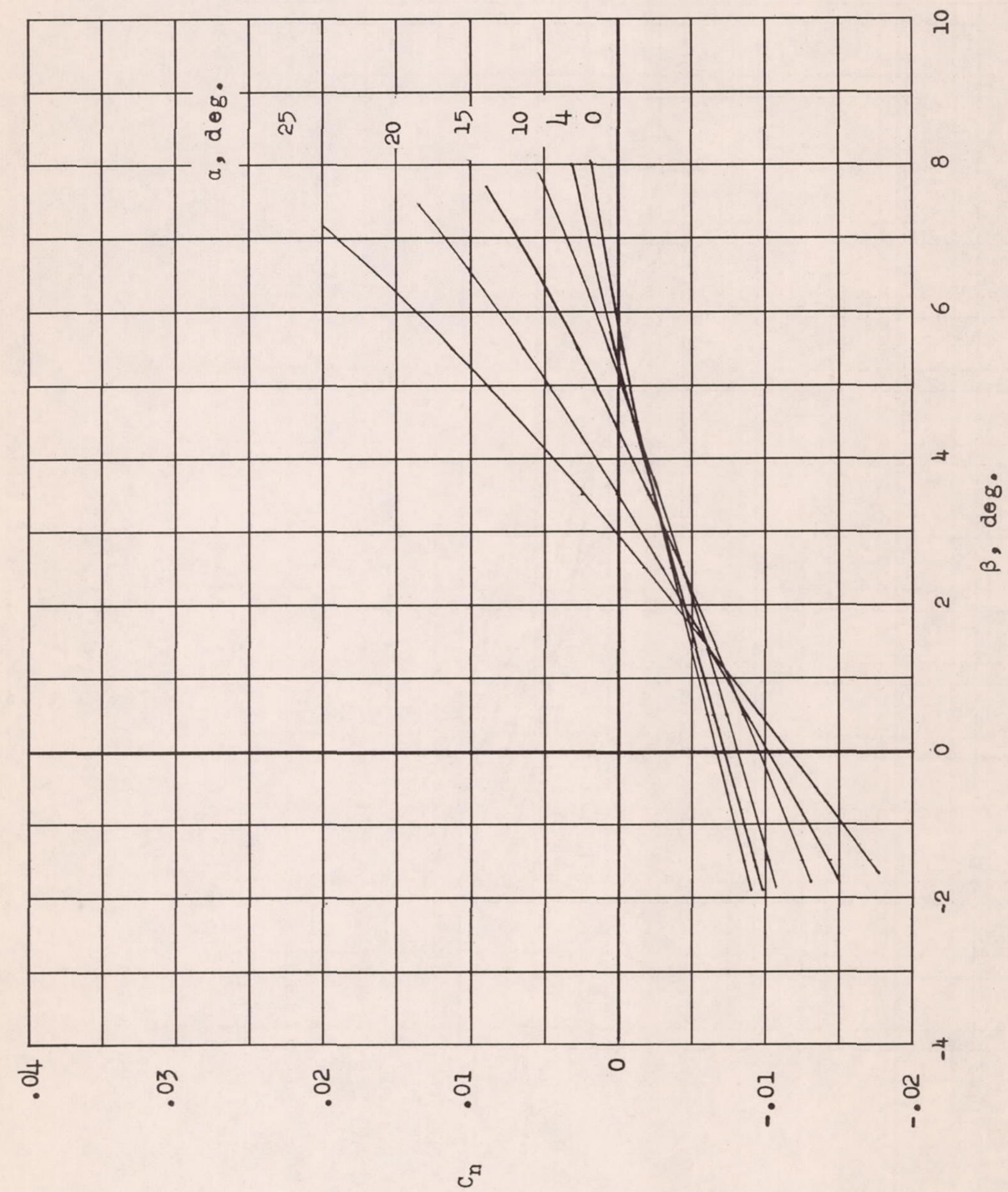
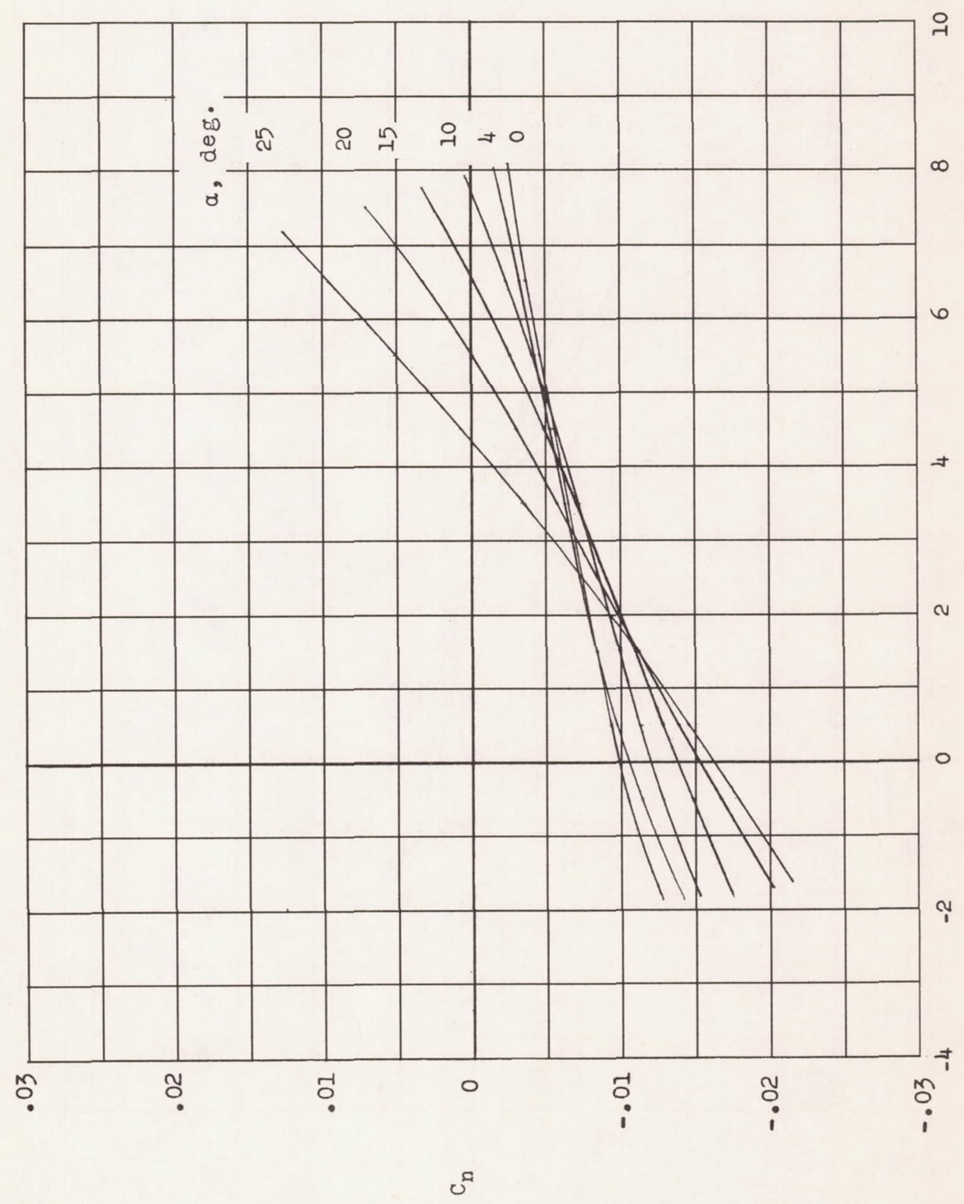


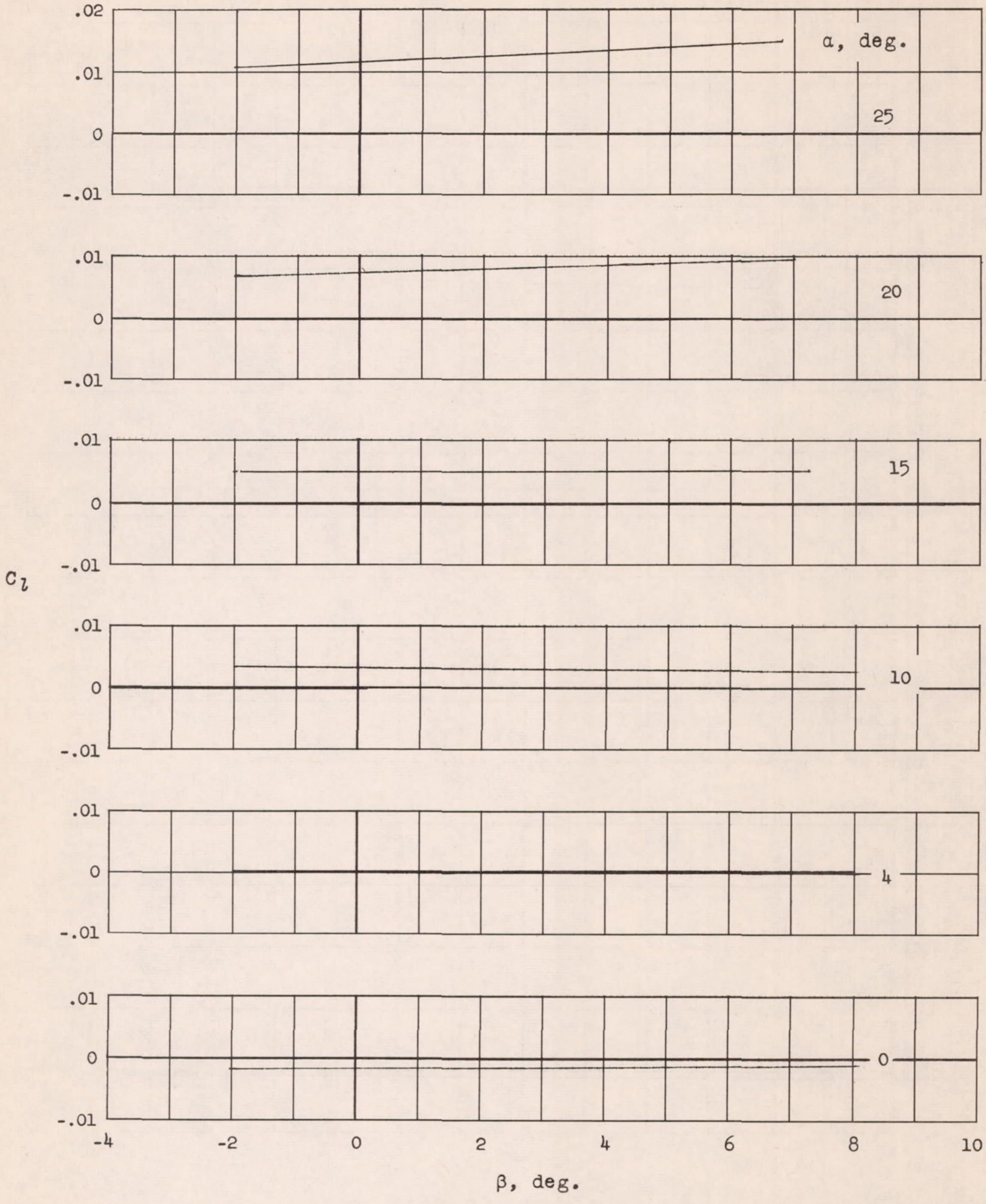
(f) $i_v = 4$.

Figure 20.- Continued.



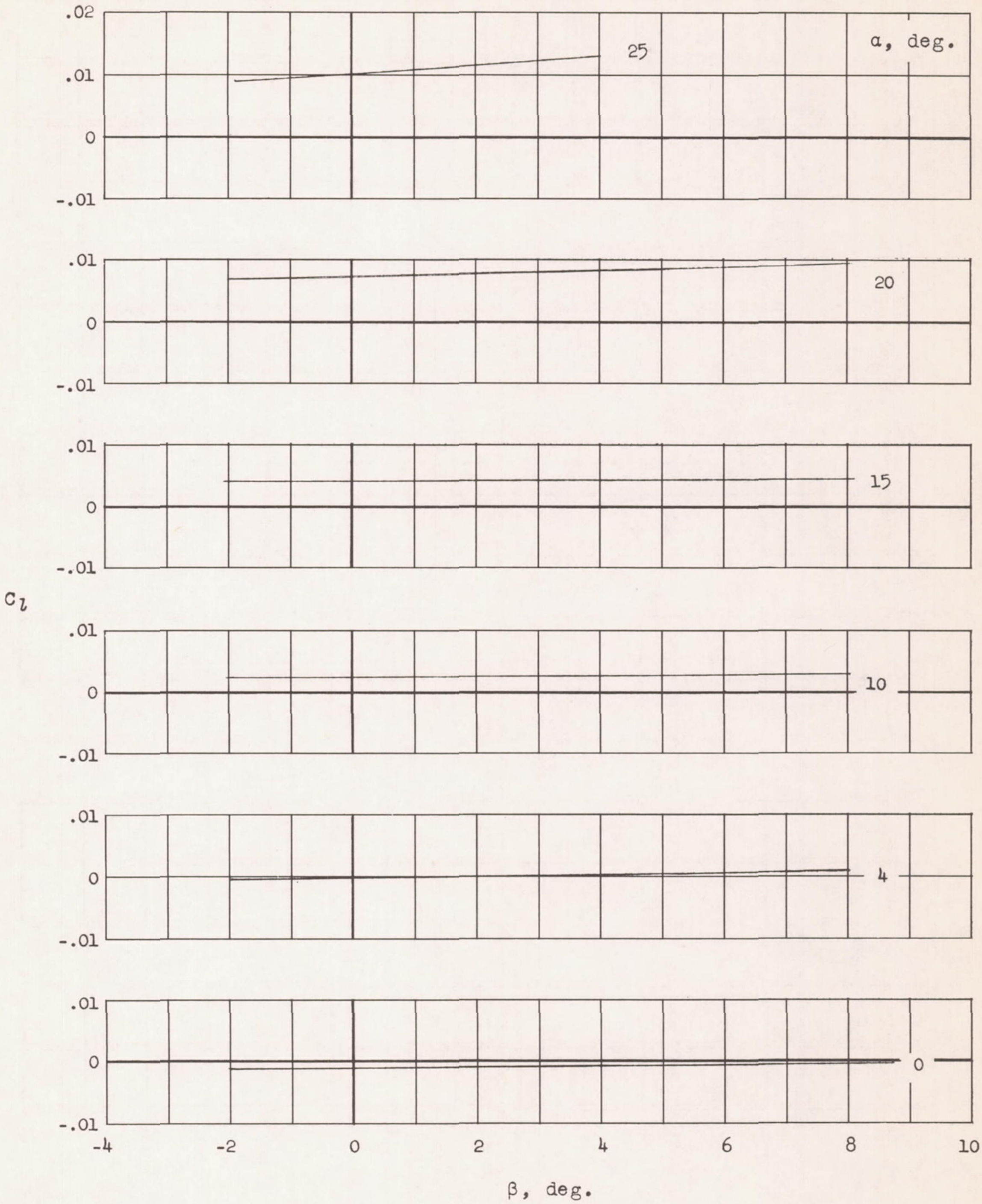
(g) $i_v = 6$.

Figure 20.- Concluded.



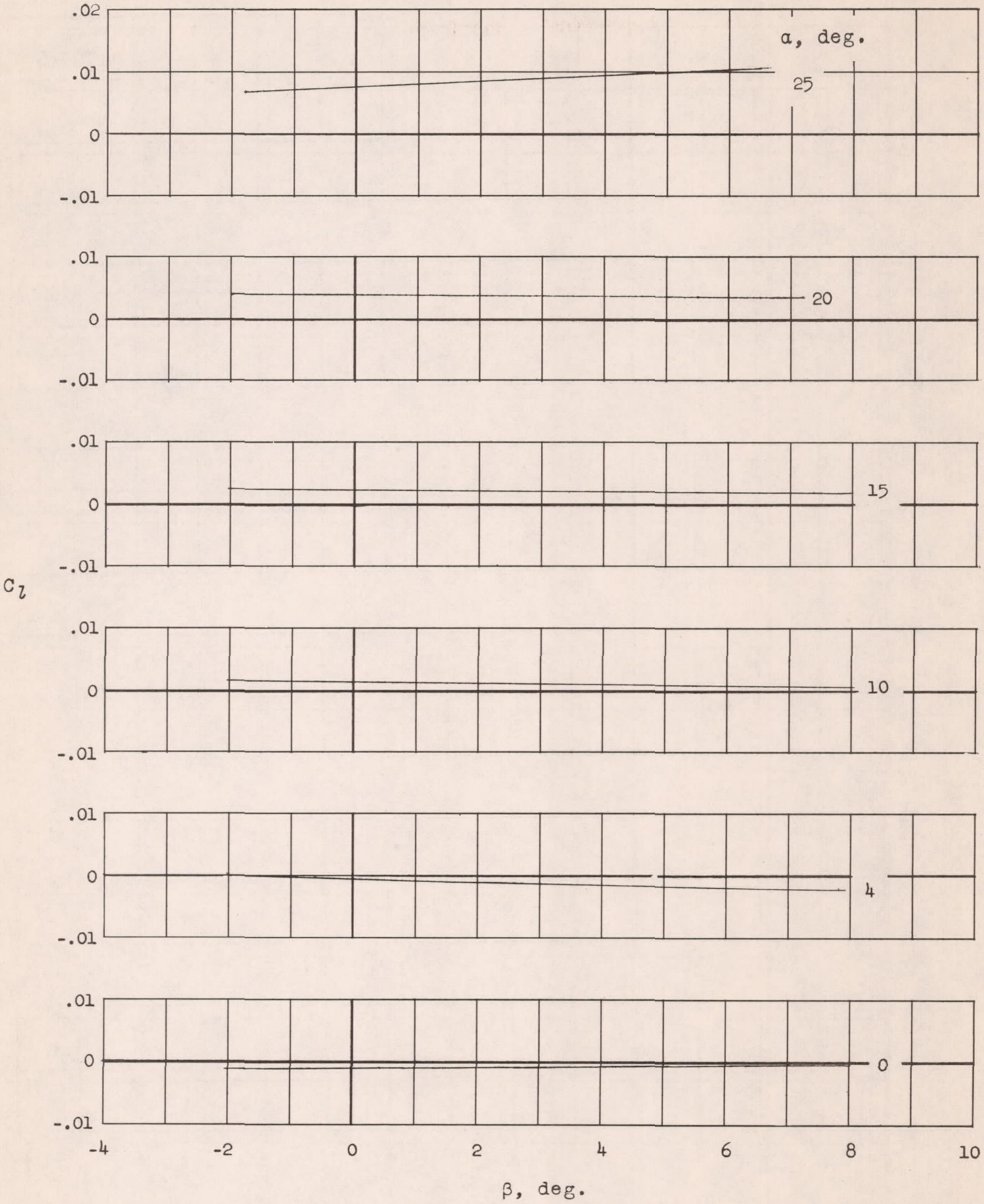
(a) $i_V = -6$.

Figure 21.- Variation of rolling-moment coefficient with sideslip angle for complete model. M = 6.86; R = 343,000; body-axis data.



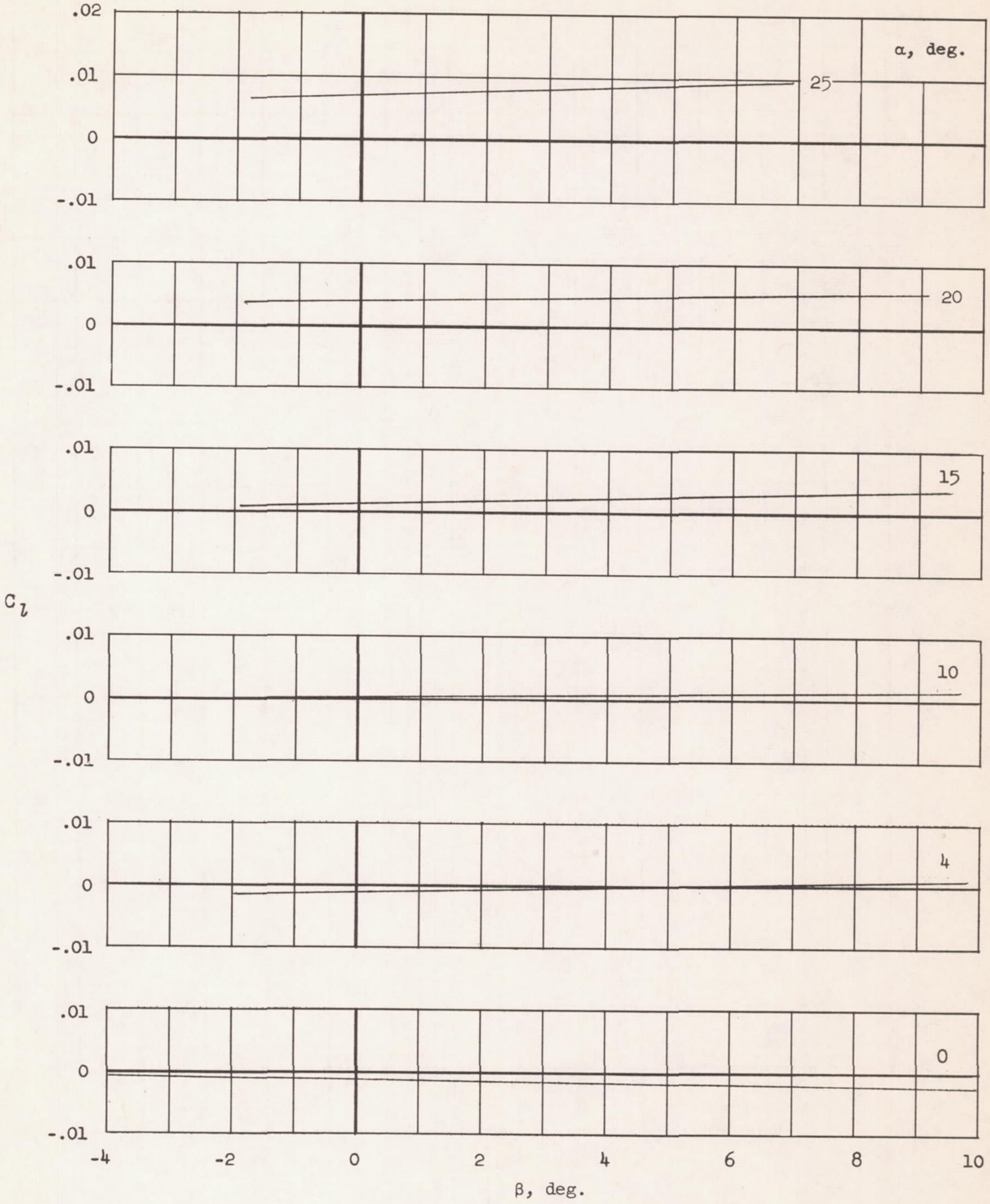
(b) $i_V = -4$.

Figure 21.- Continued.



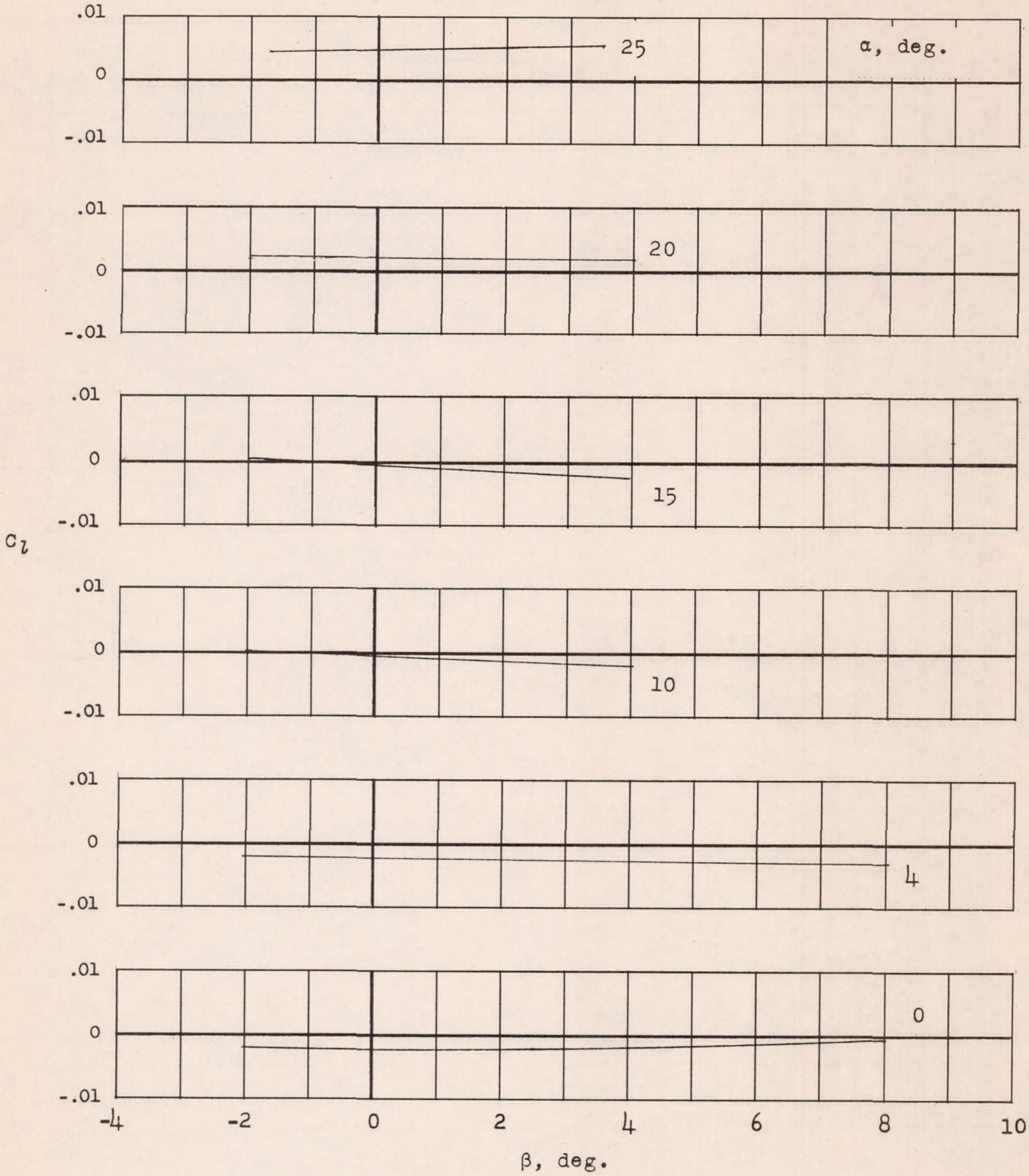
(c) $i_V = -2$.

Figure 21.- Continued.



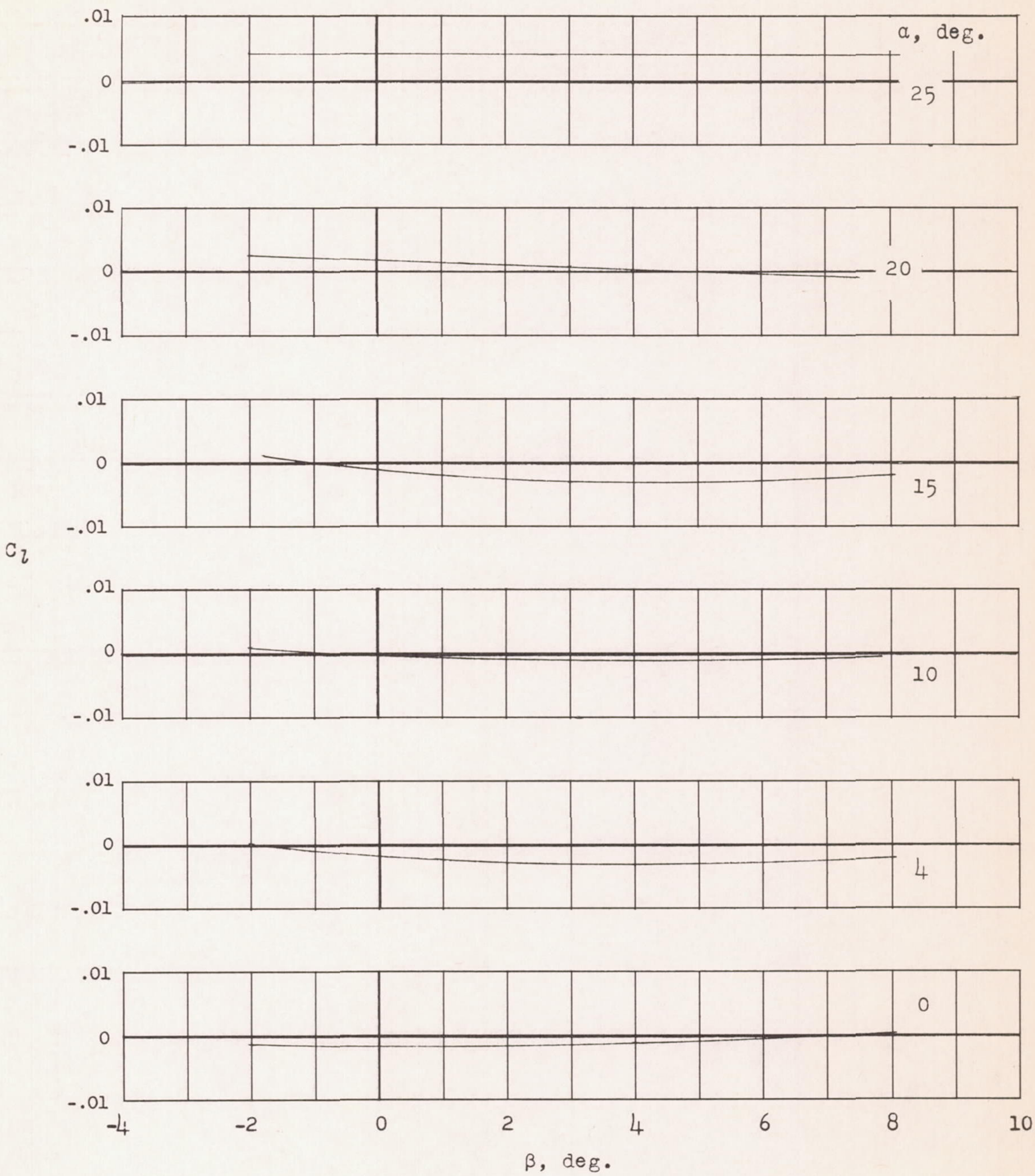
(d) $i_V = 0$.

Figure 21.- Continued.



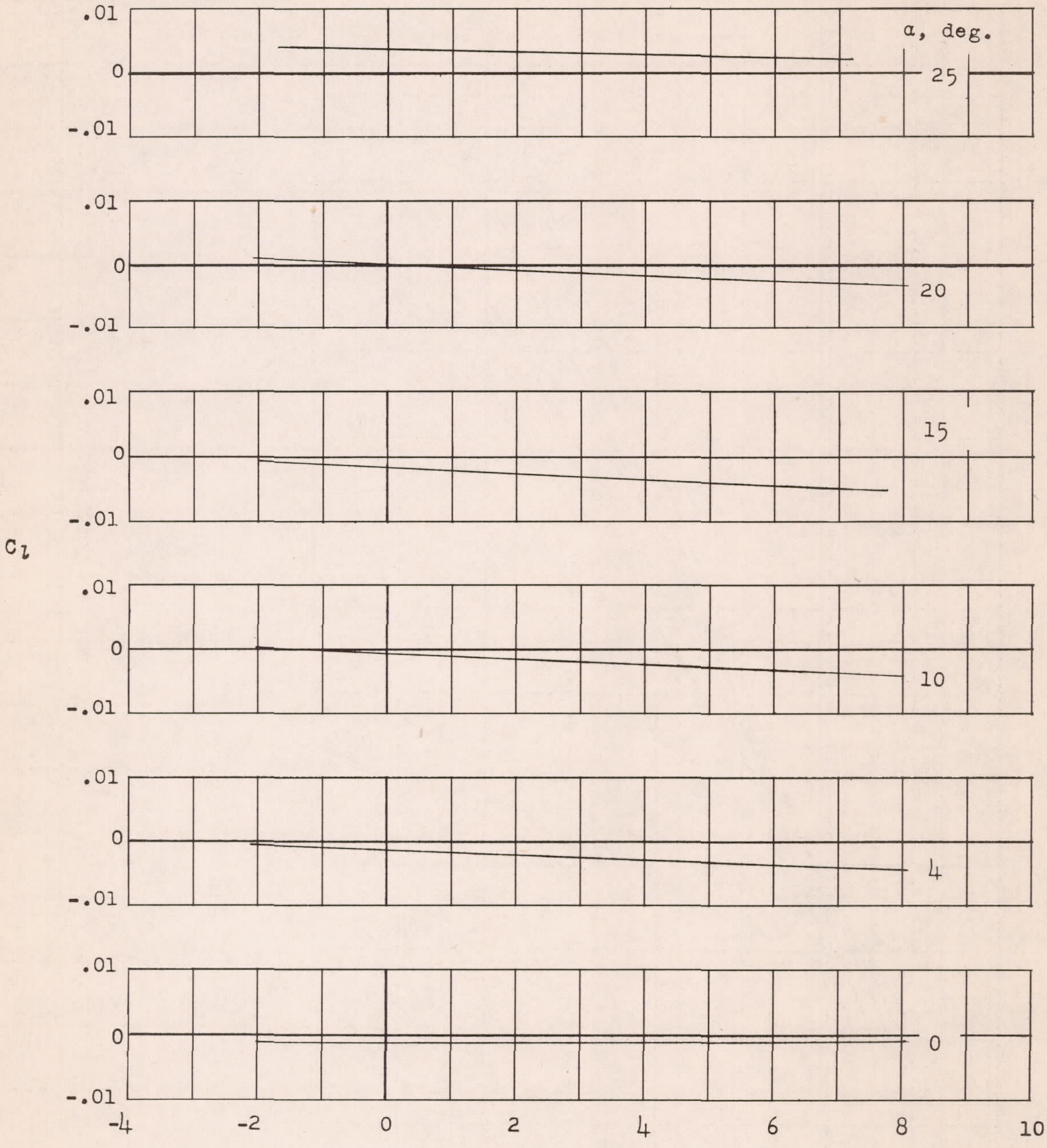
(e) $i_V = 2$.

Figure 21.- Continued.



(f) $i_V = 4$.

Figure 21.- Continued.



(g) $i_V = 6$.

Figure 21.- Concluded.

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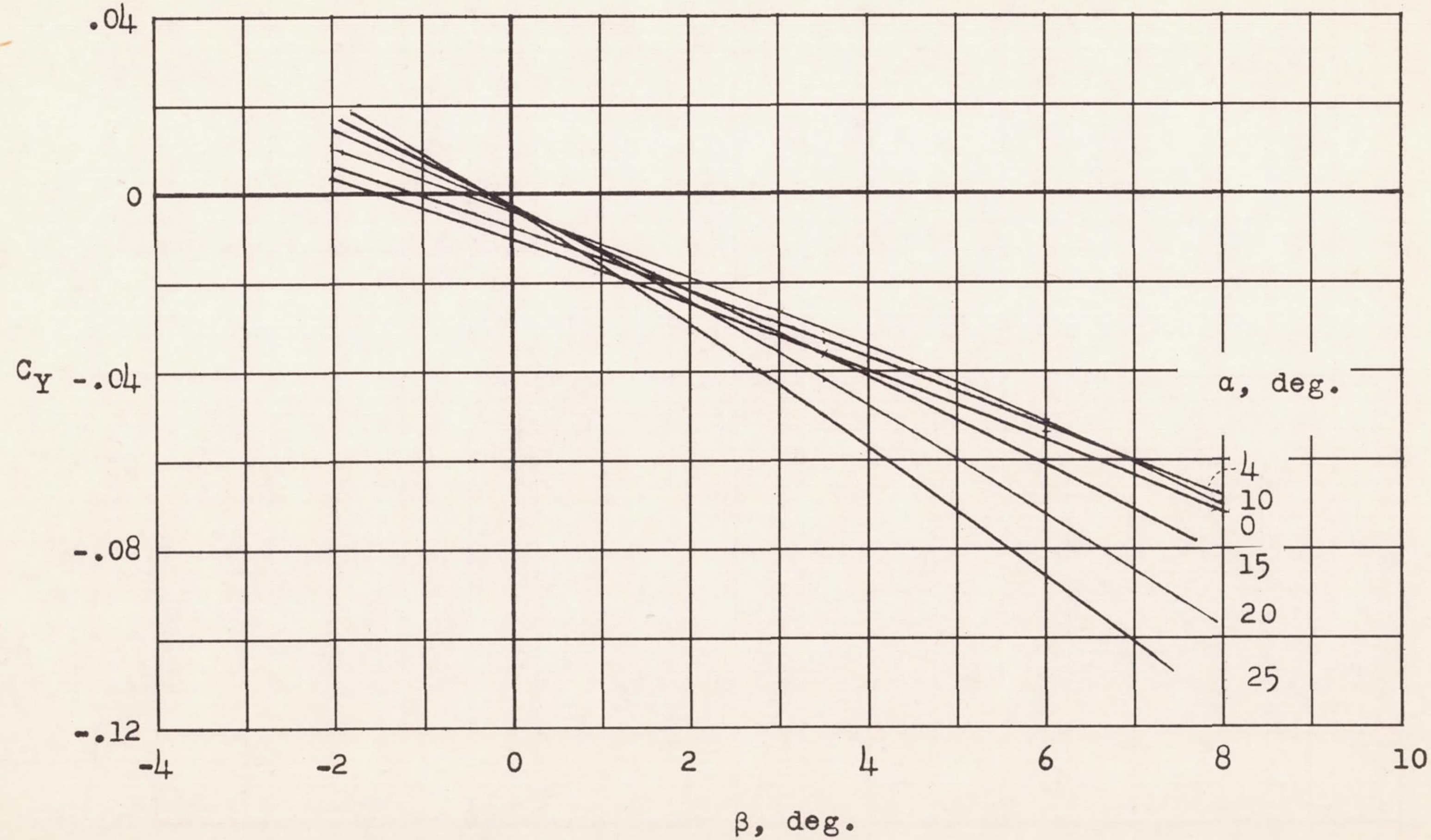

(a) $i_V = -6$.

Figure 22.- Variation of lateral-force coefficient with sideslip angle for horizontal-tail and top-vertical-tail configuration. M = 6.86; R = 343,000; body-axis data.

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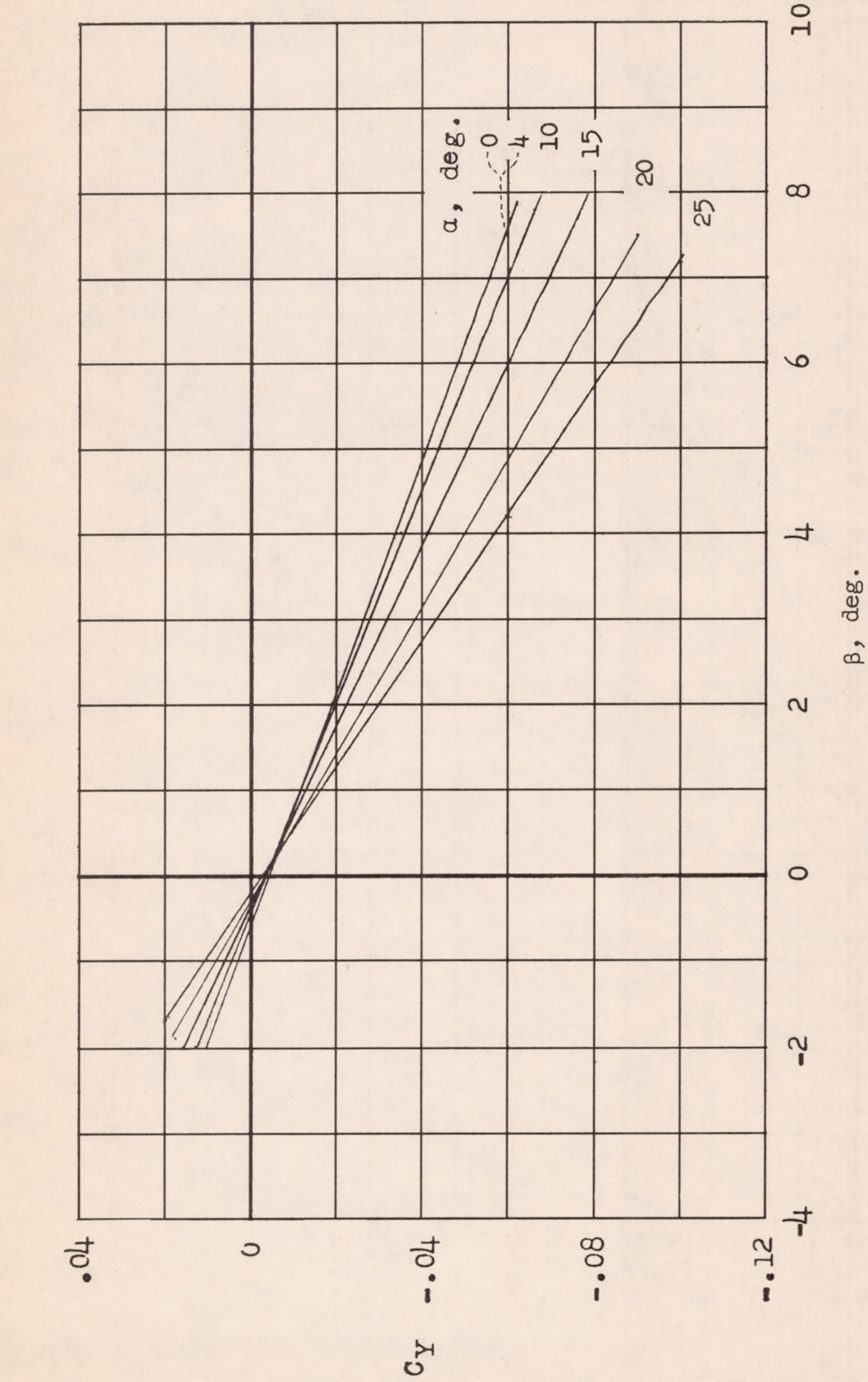
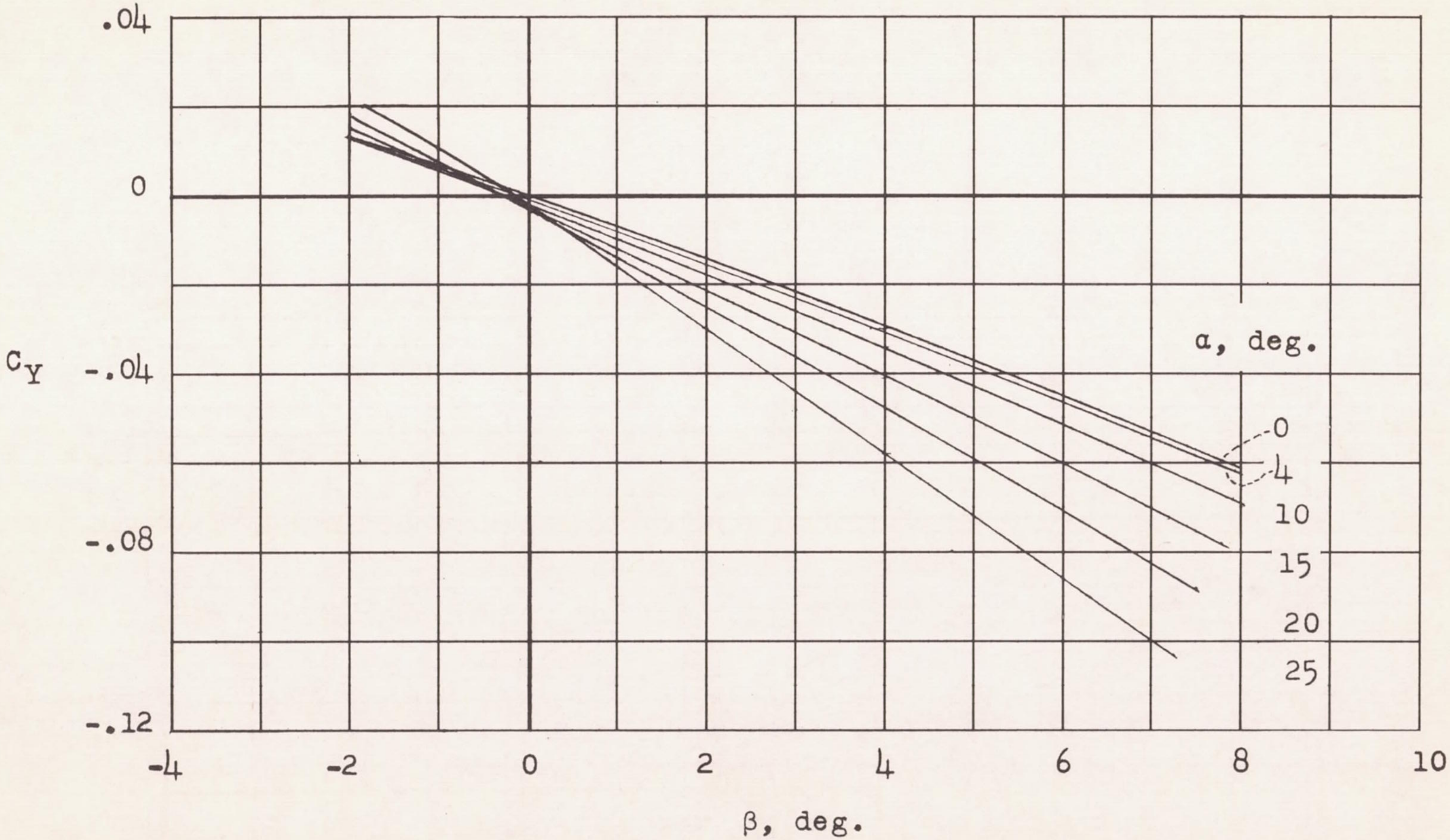


(b) $i_v = -2$.

Figure 22.- Continued.

CONFIDENTIAL



(c) $i_V = 0$.

Figure 22.- Continued.

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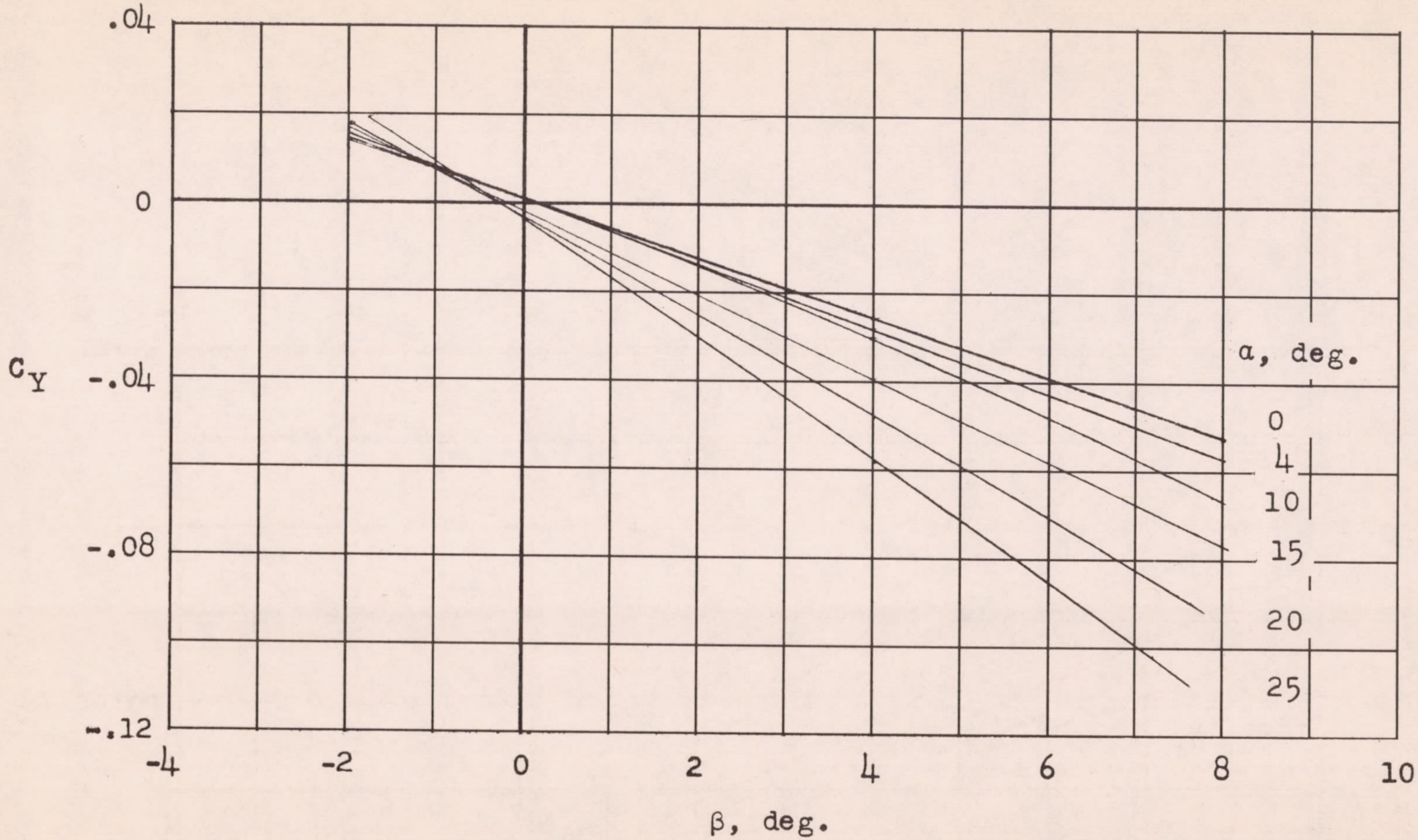
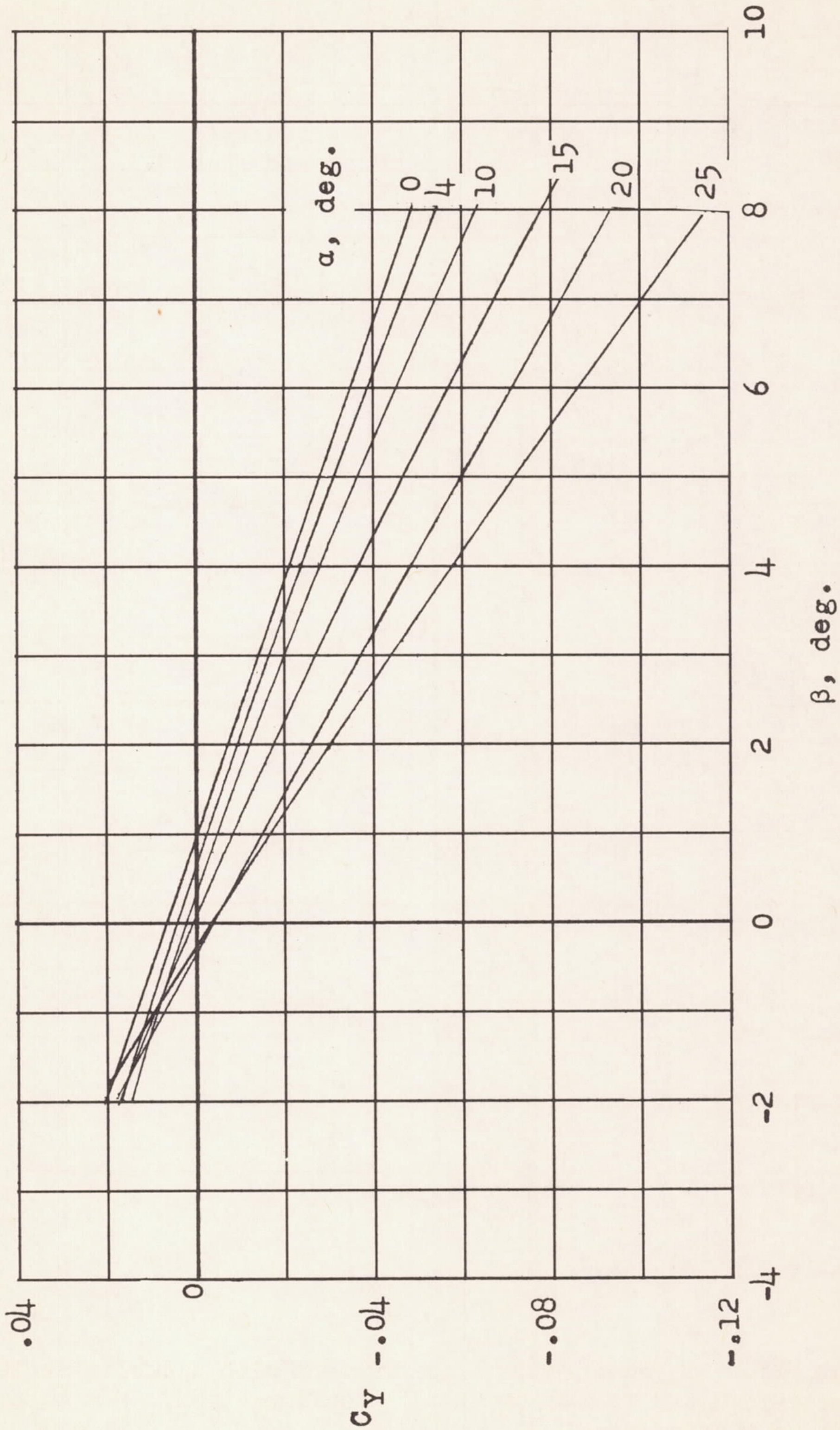


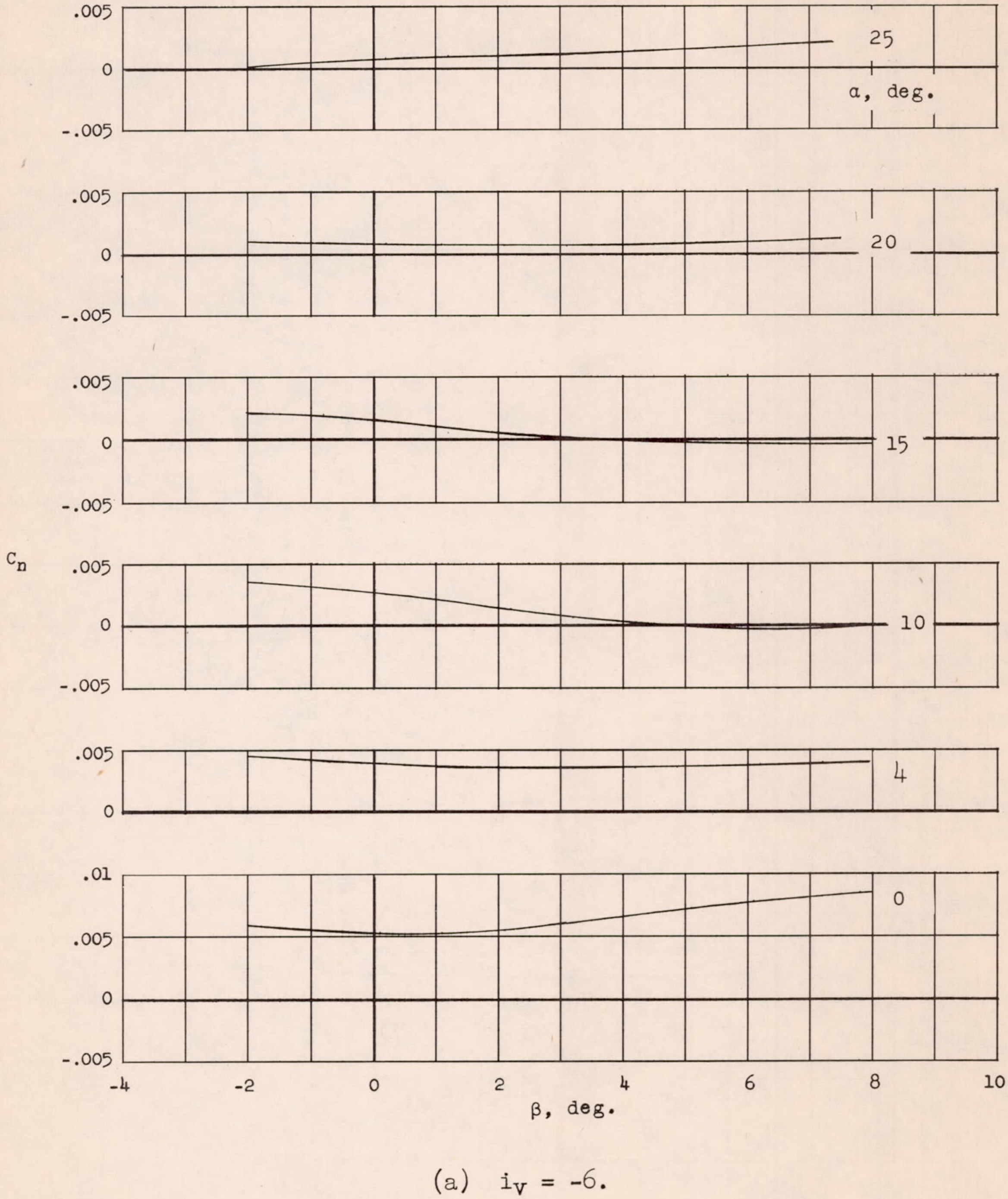
(d) $i_V = 2$.

Figure 22.- Continued.



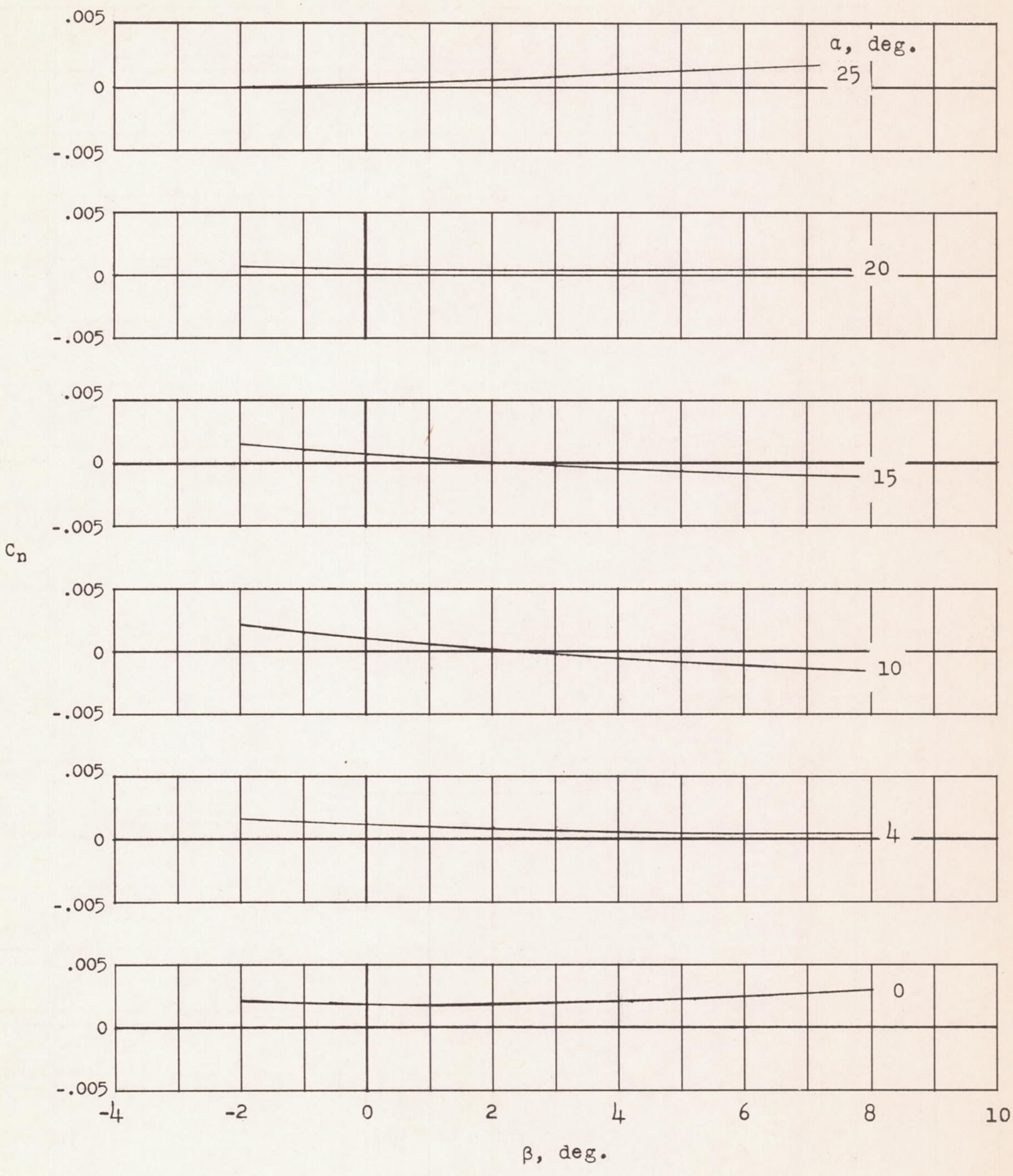
(e) $i_v = 6$.

Figure 22.- Concluded.



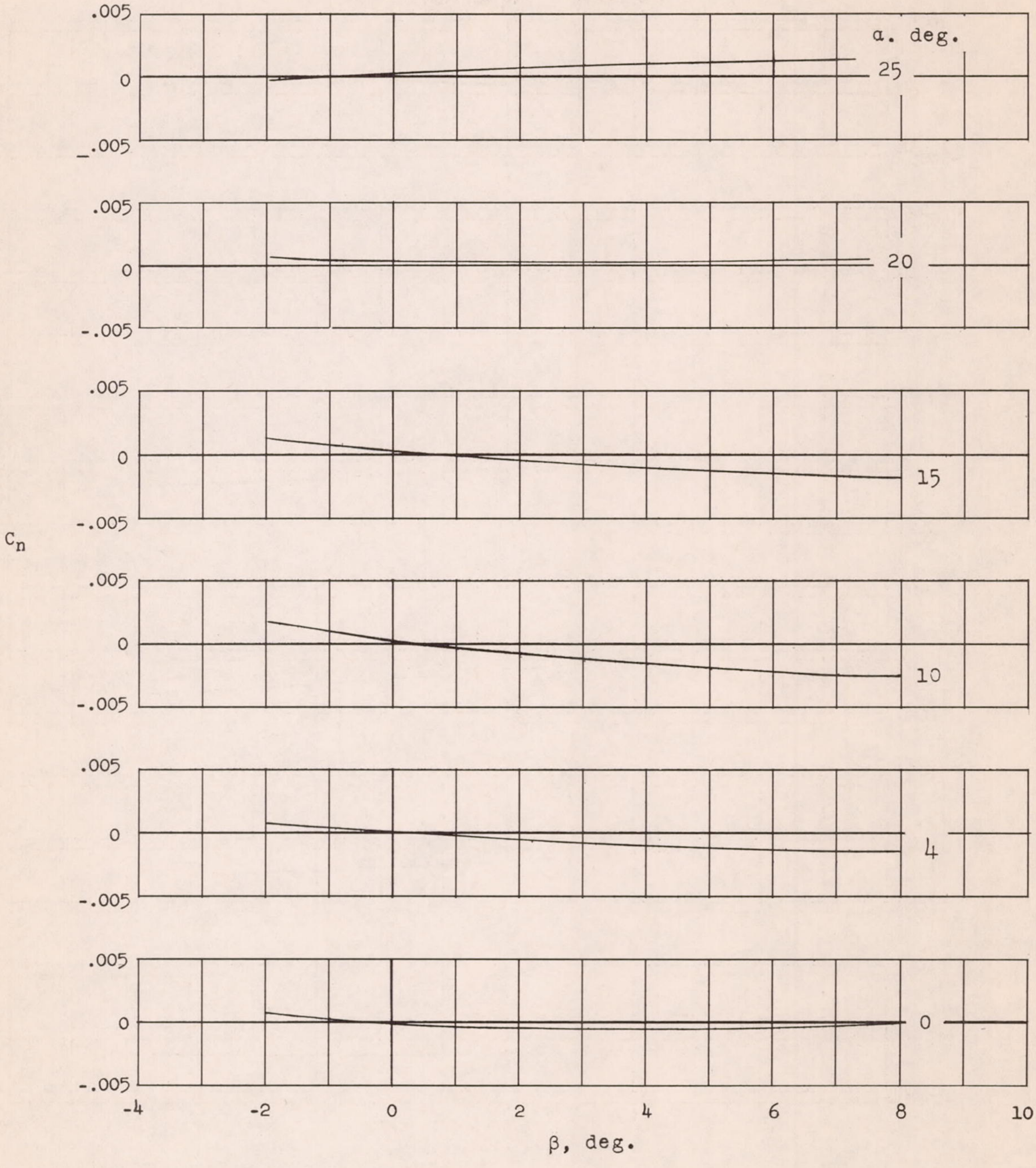
(a) $i_V = -6$.

Figure 23.- Variation of yawing-moment coefficient with sideslip angle for horizontal-tail and top-vertical-tail configuration. M = 6.86; R = 343,000; body-axis data.



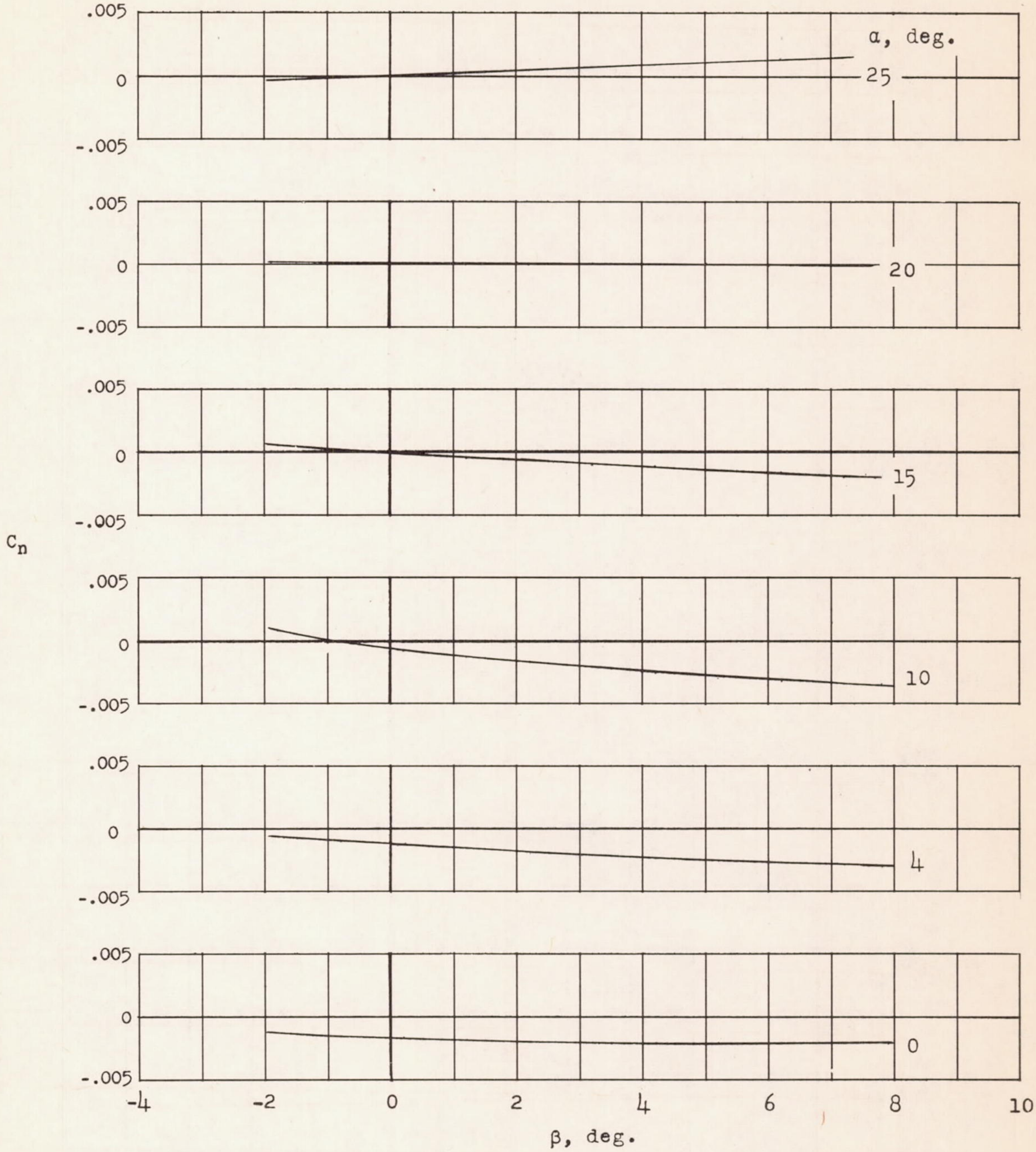
(b) $i_V = -2$.

Figure 23.- Continued.



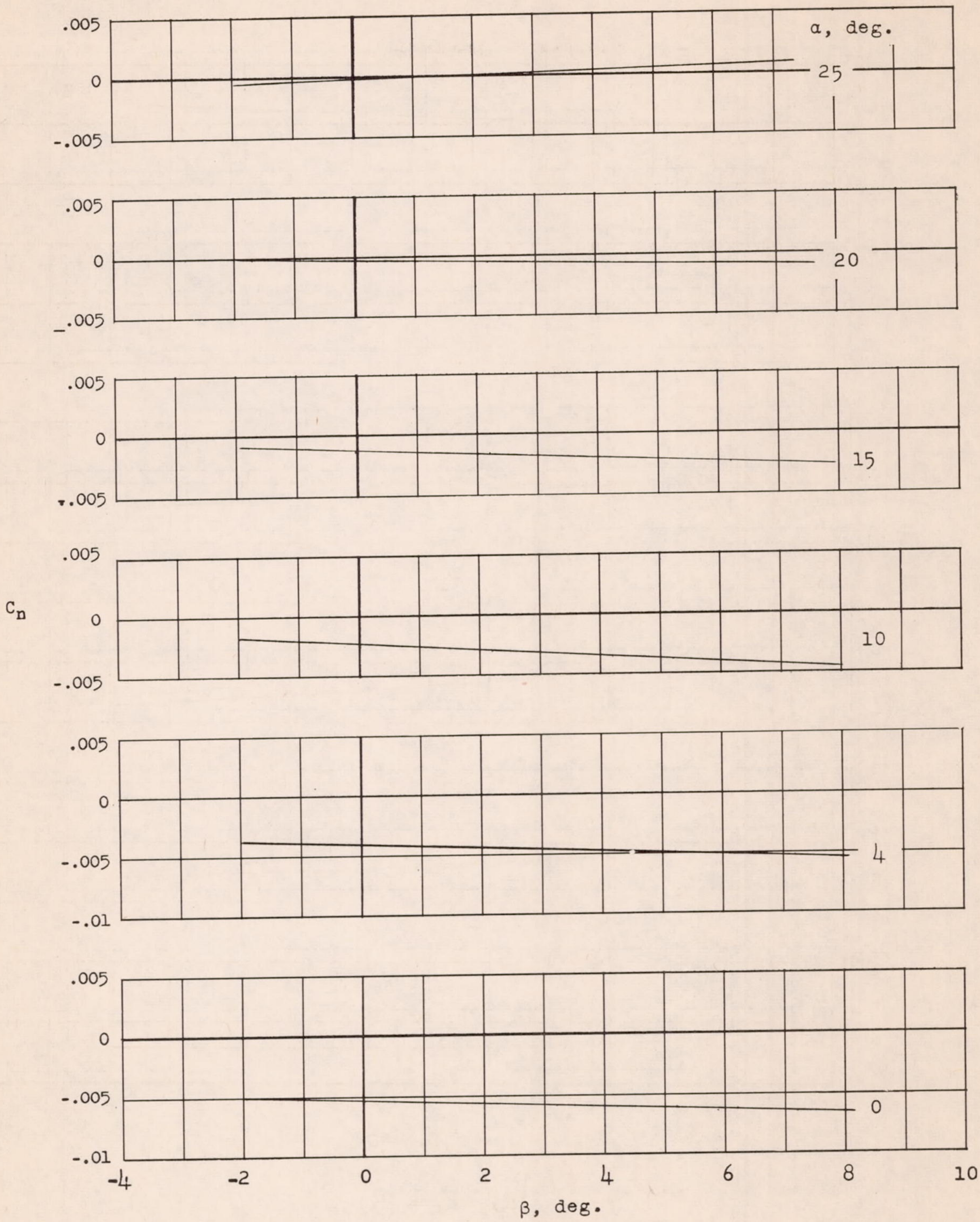
(c) $i_V = 0$.

Figure 23.- Continued.



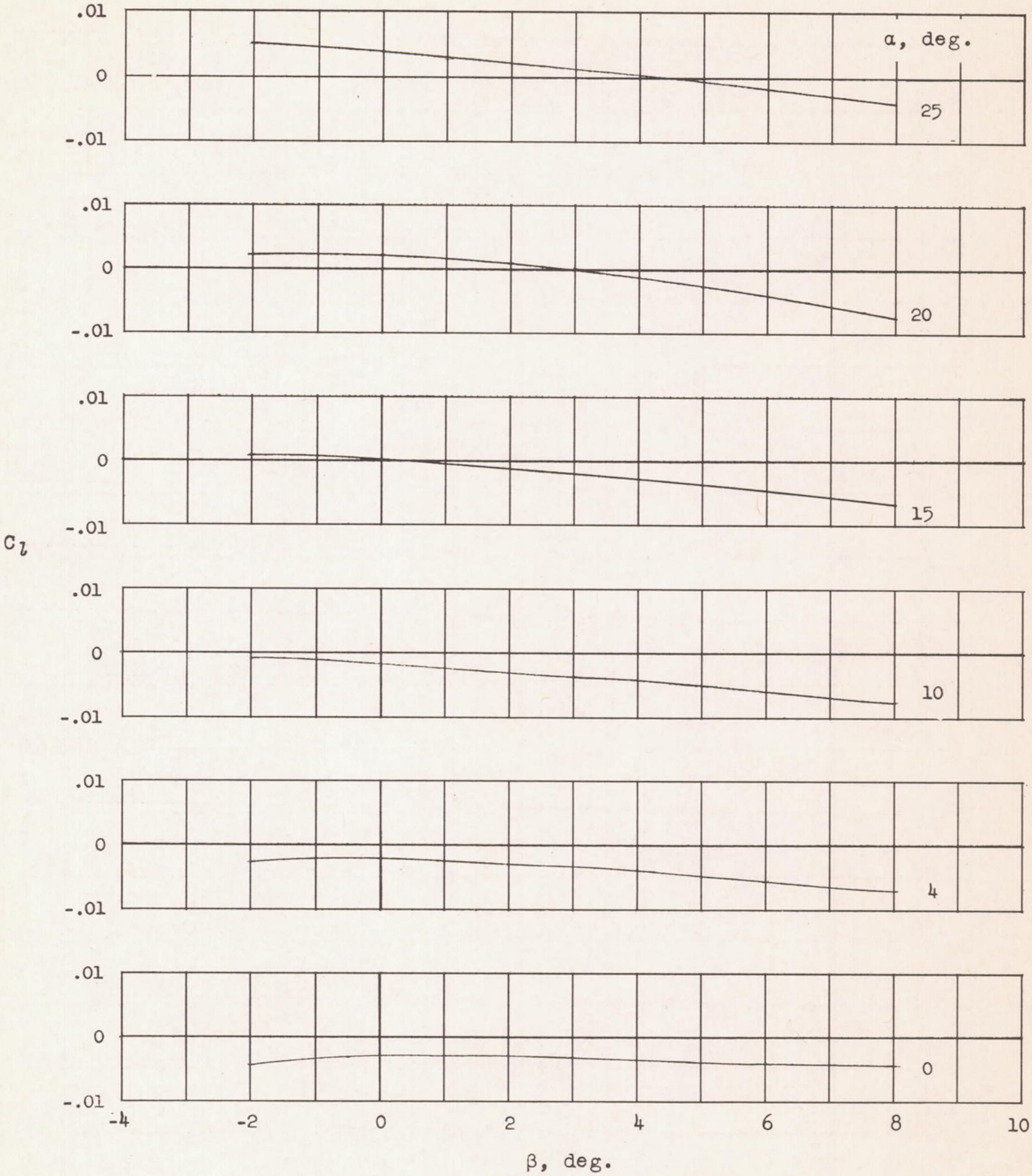
(d) $i_V = 2$.

Figure 23.- Continued.



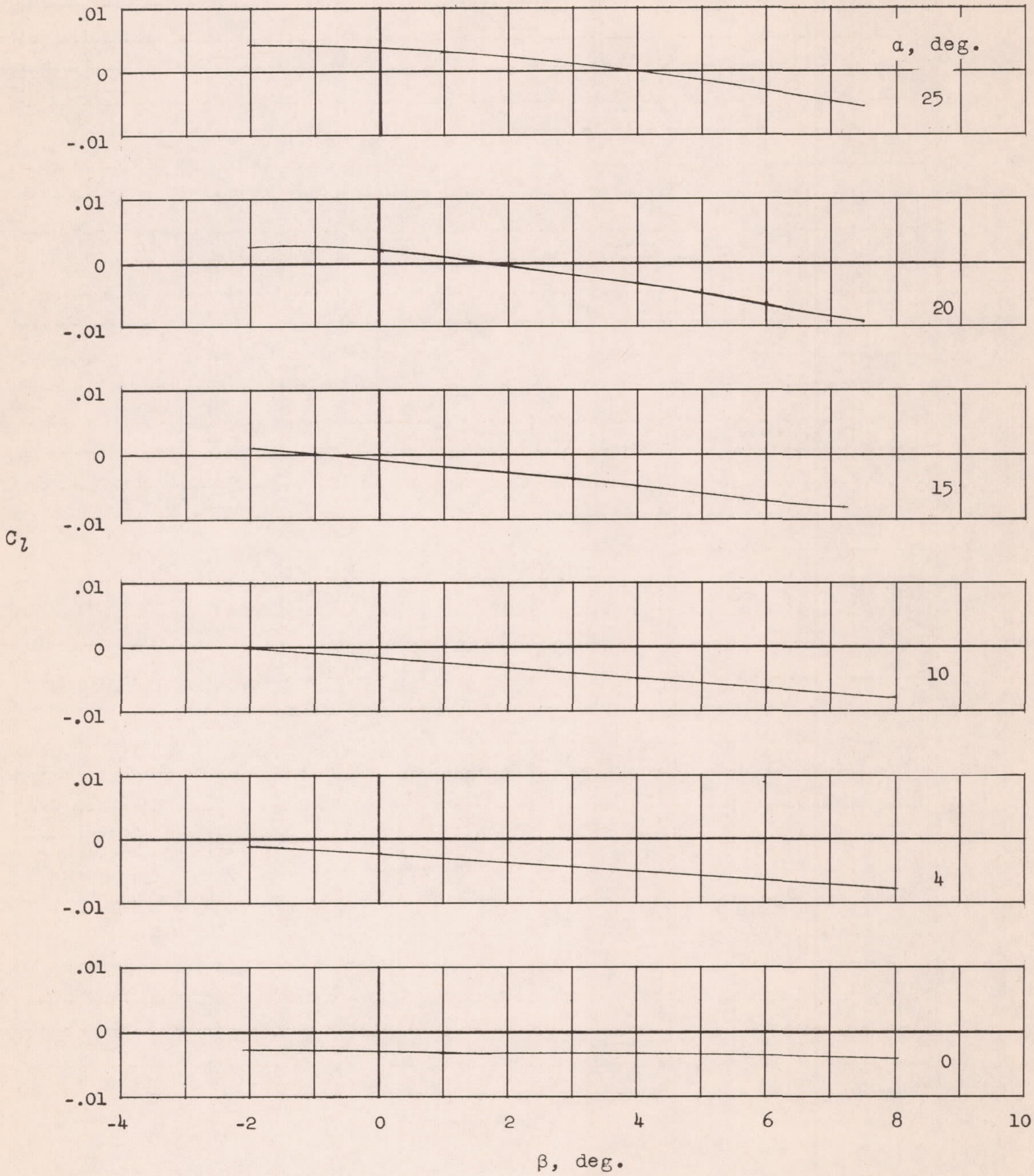
(e) $i_V = 6$.

Figure 23.- Concluded.



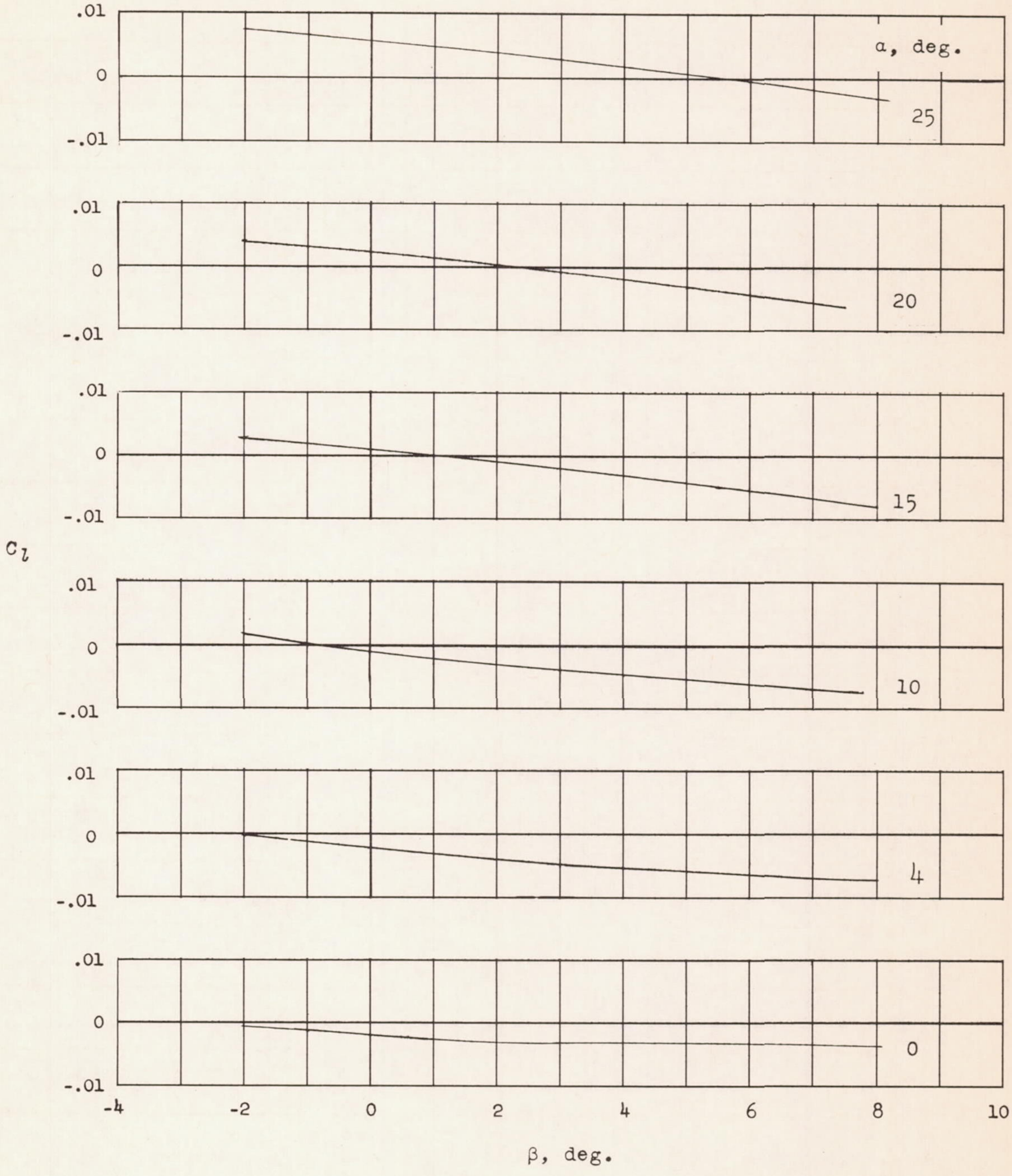
(a) $i_V = -6$.

Figure 24.- Variation of rolling-moment coefficient with sideslip angle for horizontal-tail and top-vertical-tail configuration. M = 6.86; R = 343,000; body-axis data.



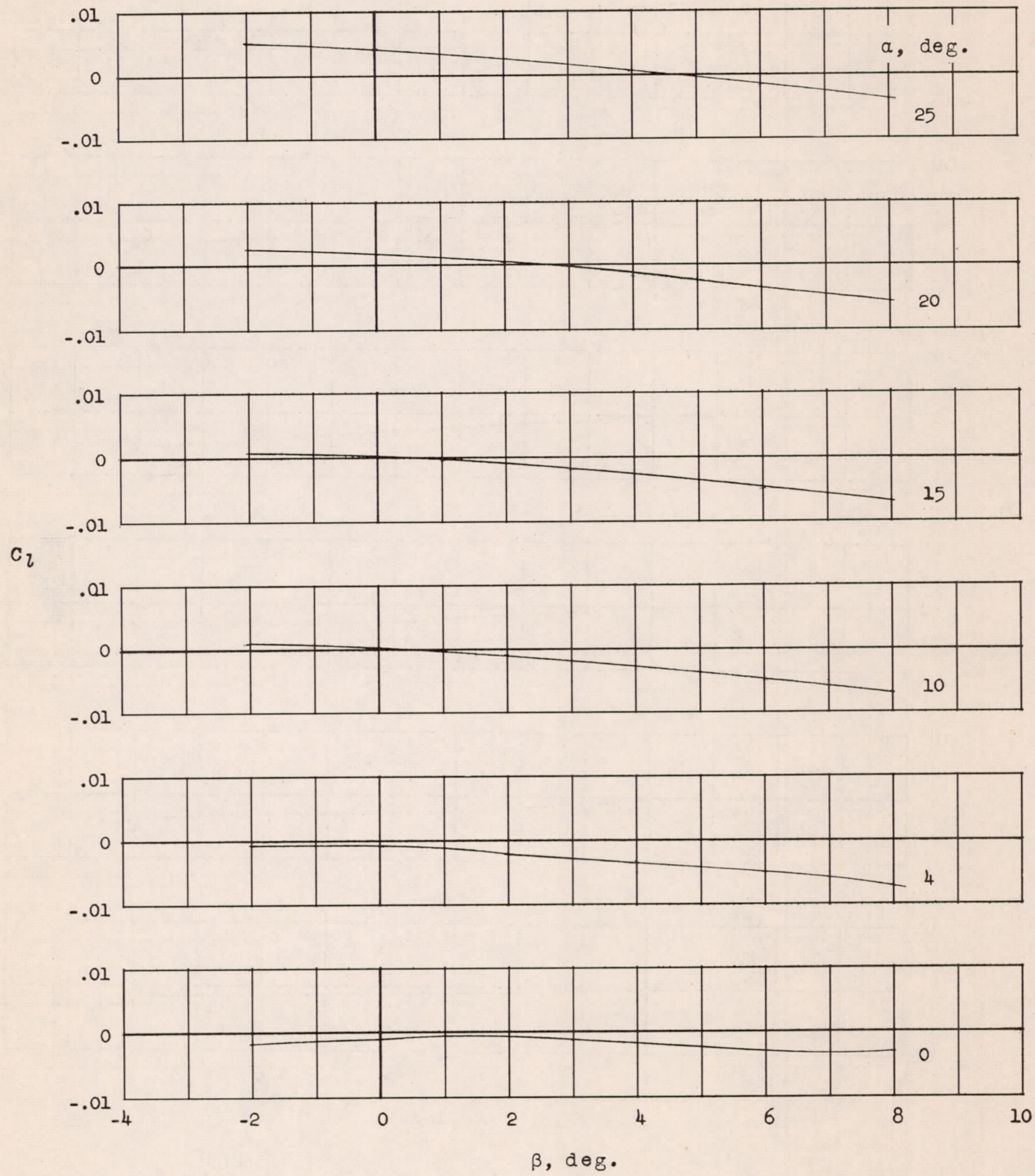
(b) $i_V = -2$.

Figure 24.- Continued.



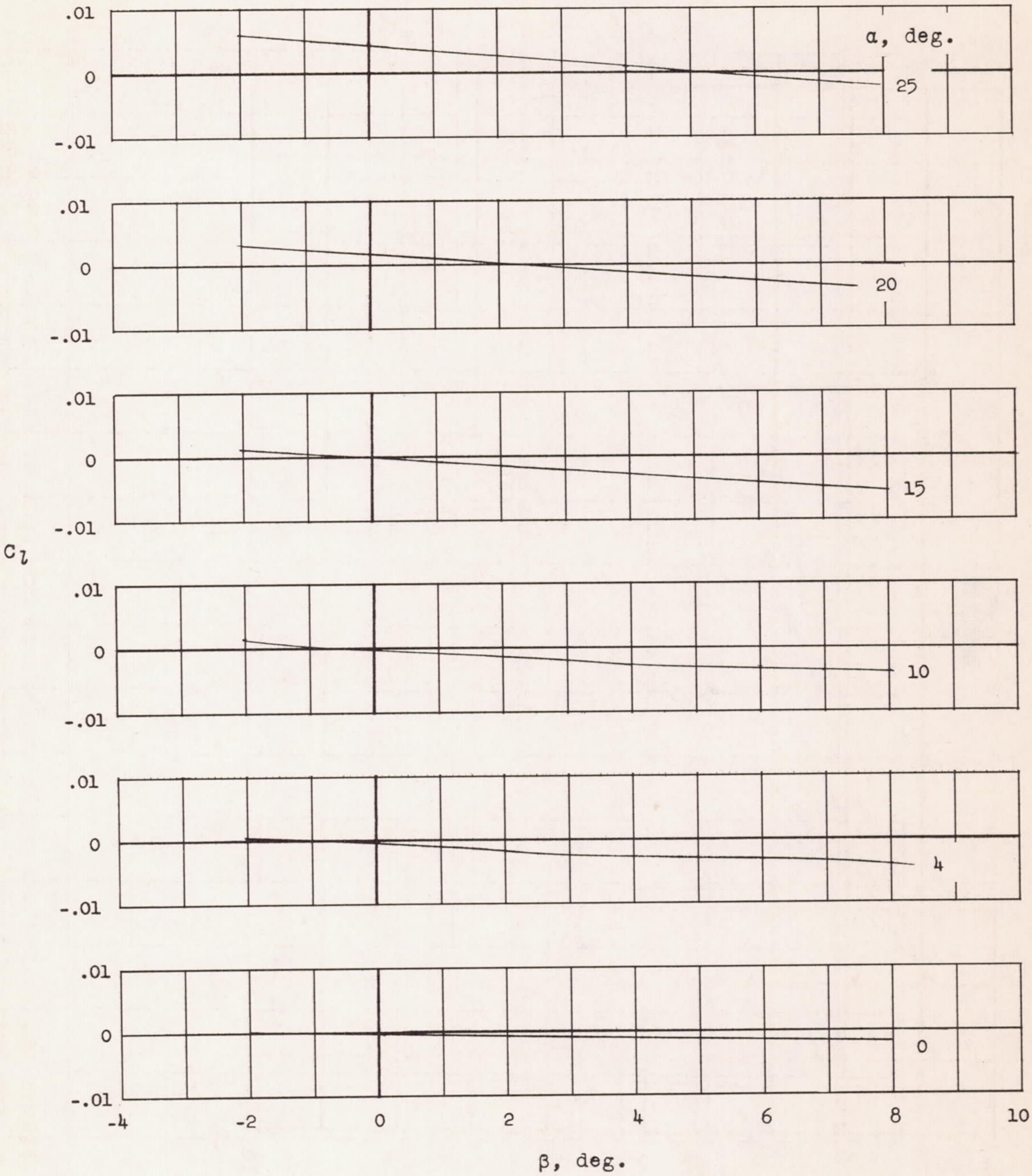
(c) $i_V = 0$.

Figure 24.- Continued.



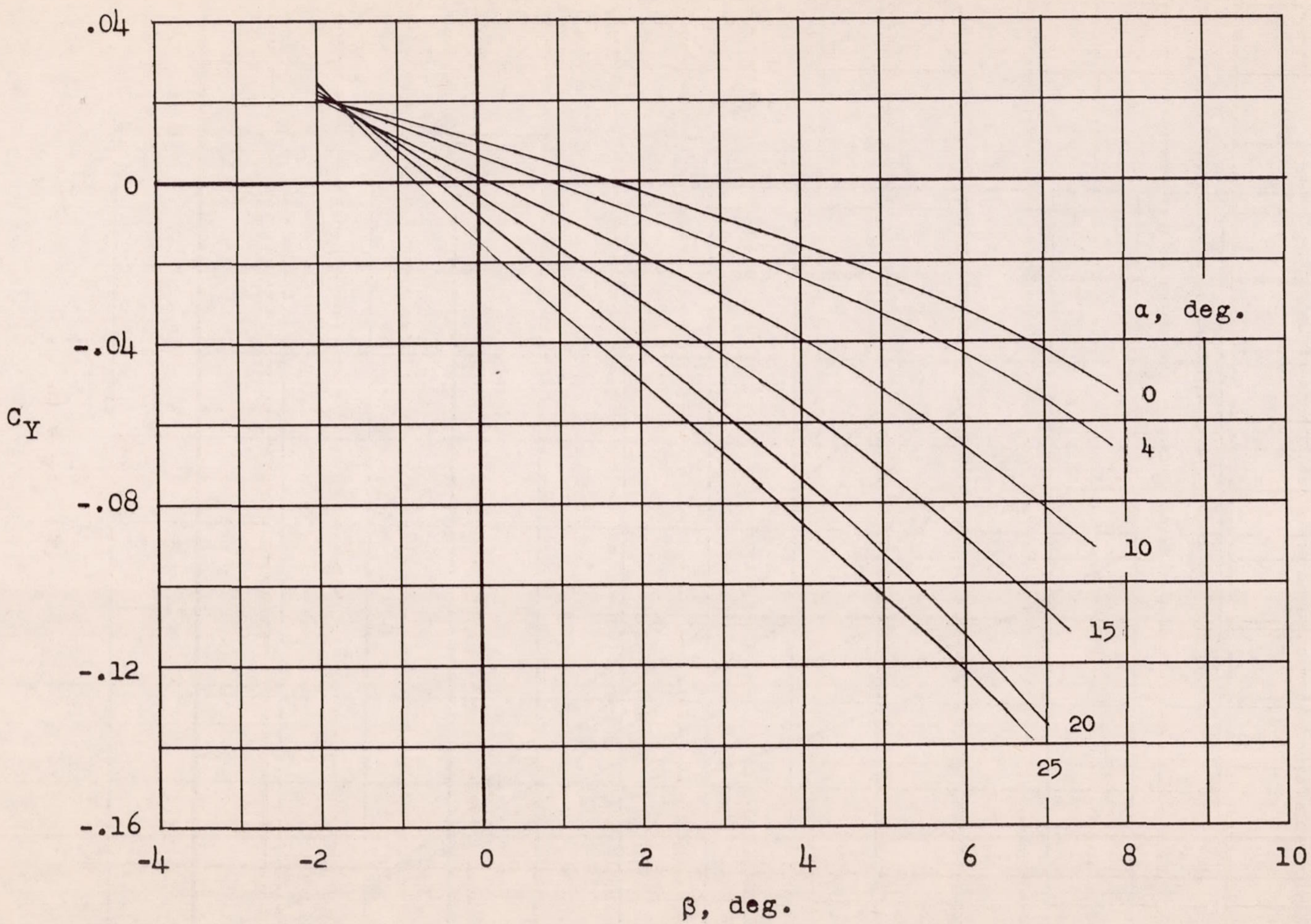
(d) $i_V = 2$.

Figure 24.- Continued.



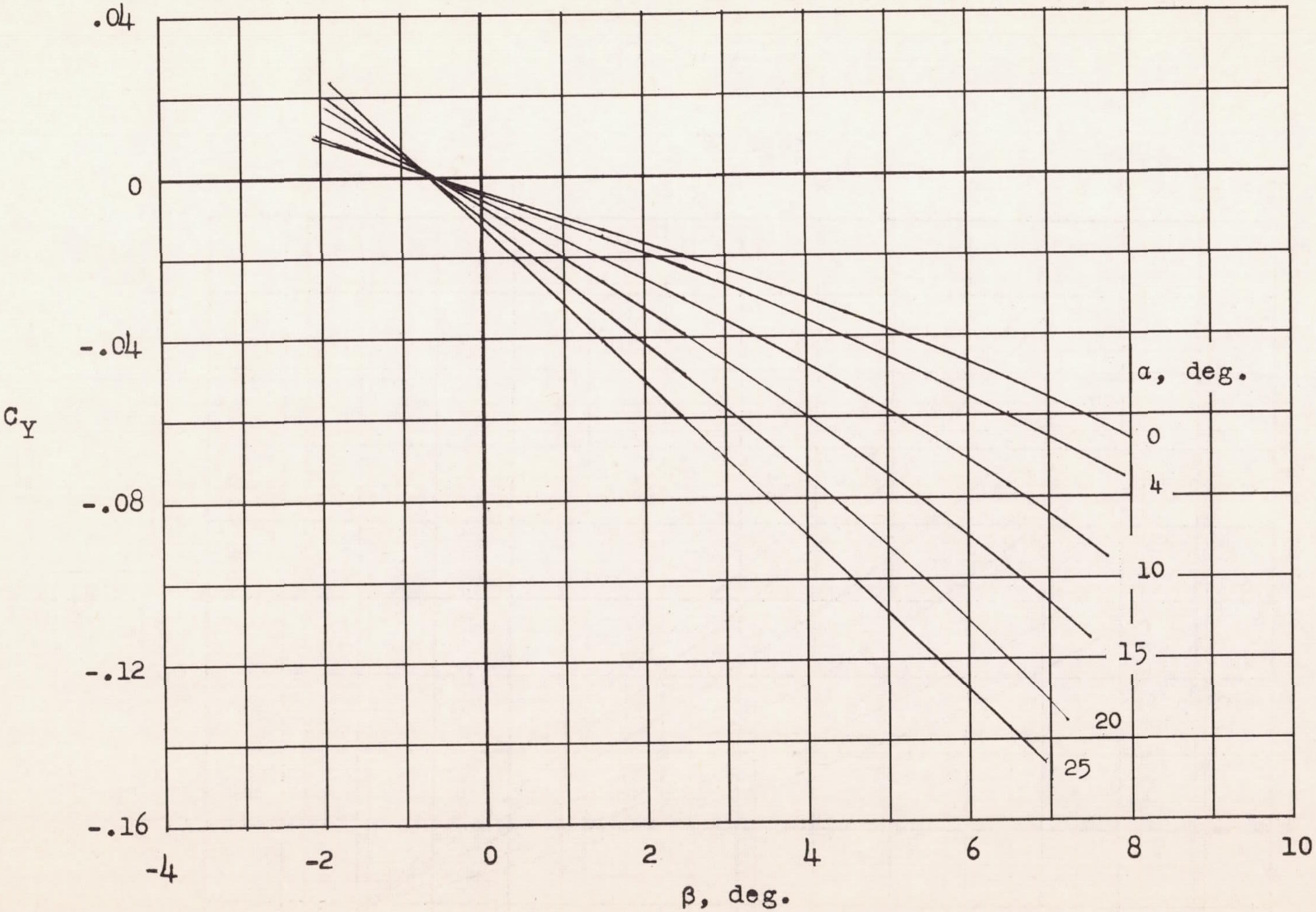
(e) $i_V = 6$.

Figure 24.- Concluded.



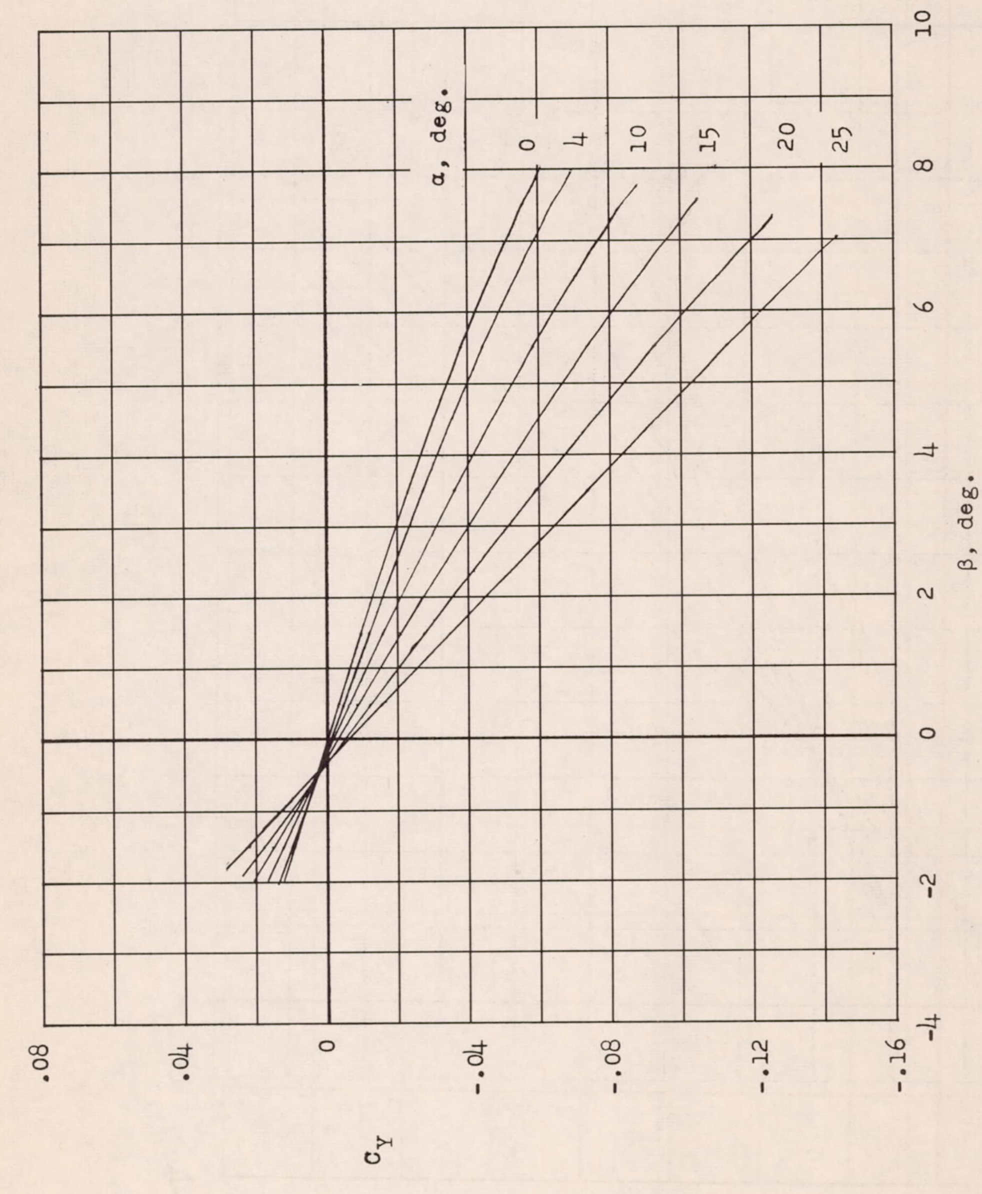
(a) $i_V = -6$.

Figure 25.- Variation of lateral-force coefficient with sideslip angle for horizontal-tail and bottom-vertical-tail configuration. M = 6.86; R = 343,000; body-axis data.



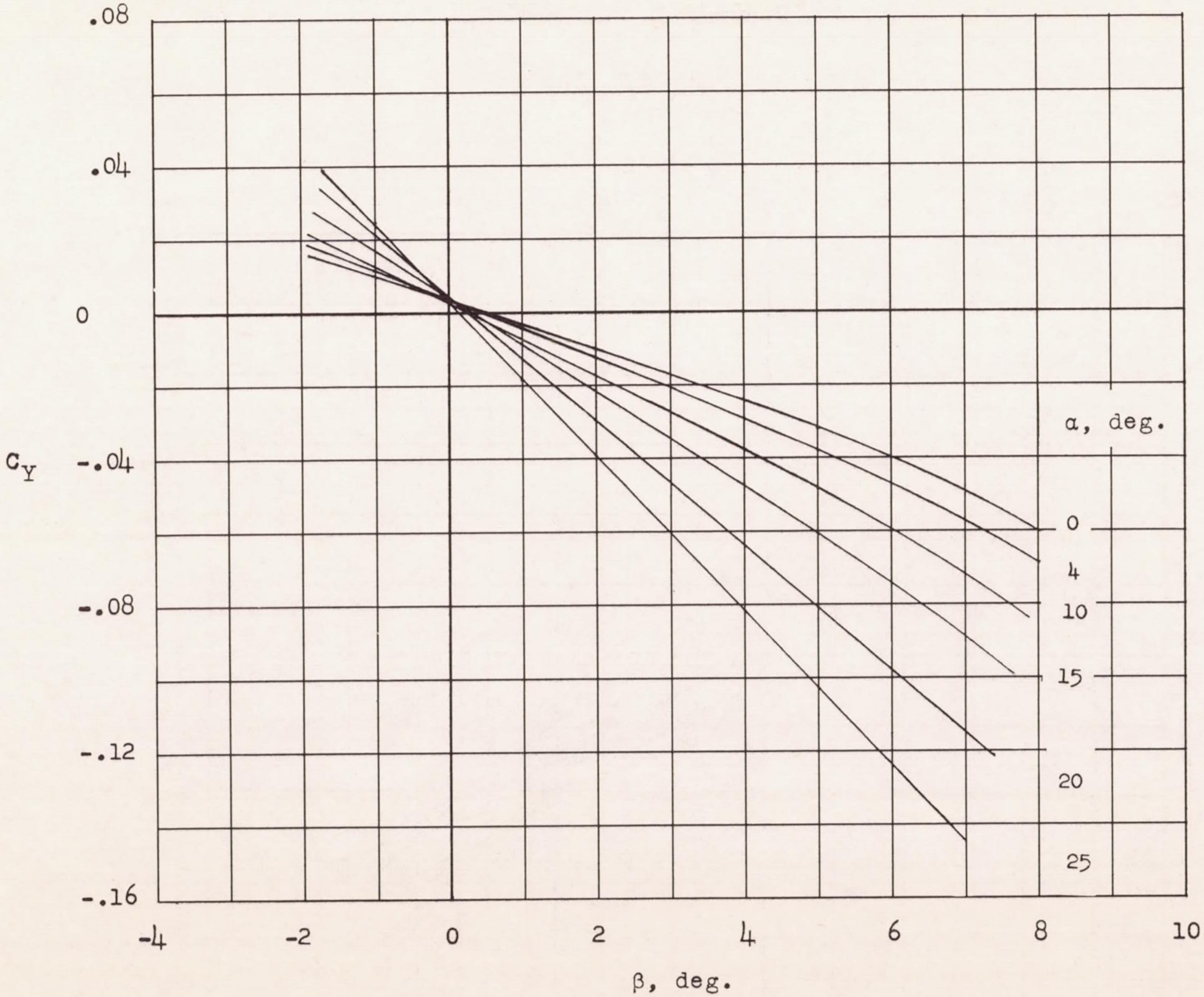
(b) $i_V = -2$.

Figure 25.- Continued.



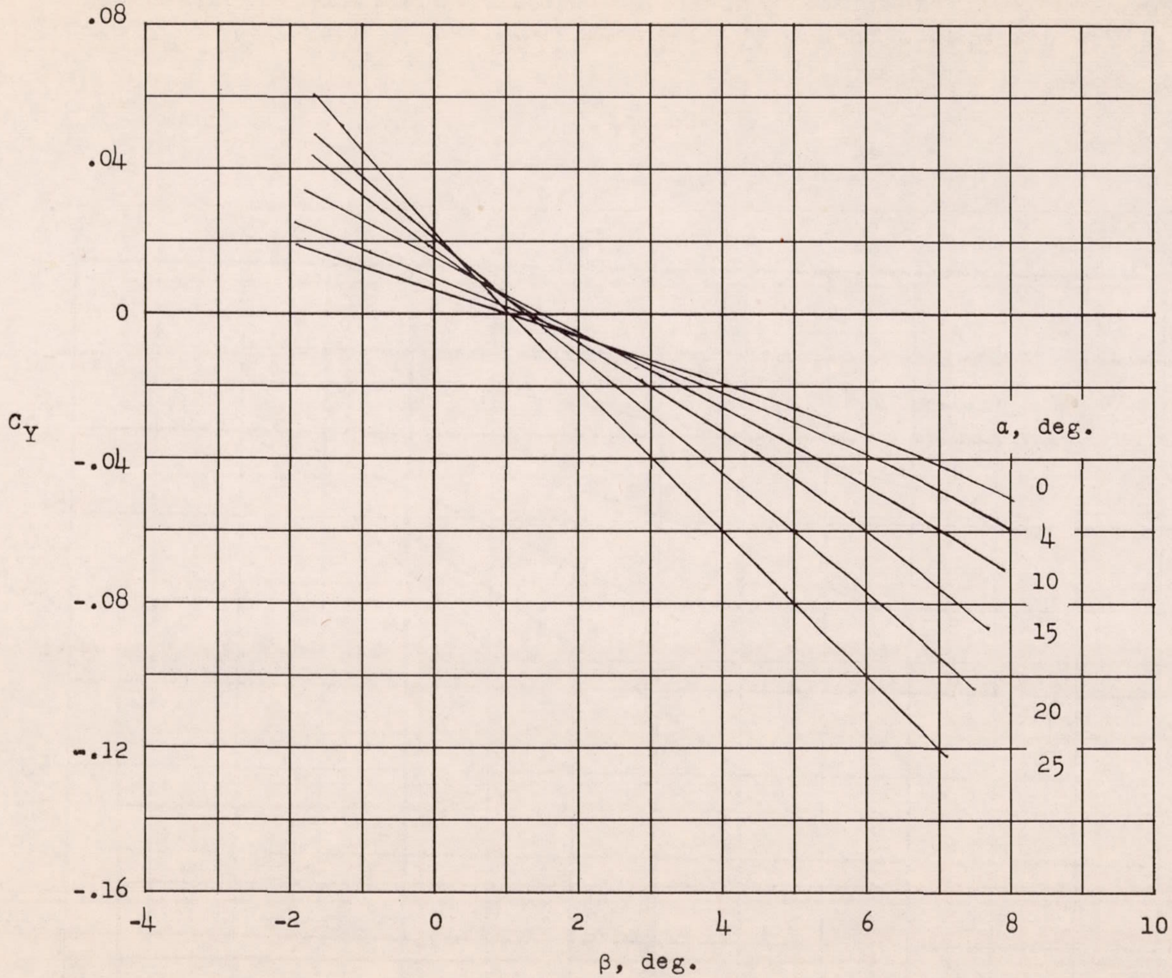
(c) $i_v = 0$.

Figure 25.- Continued.



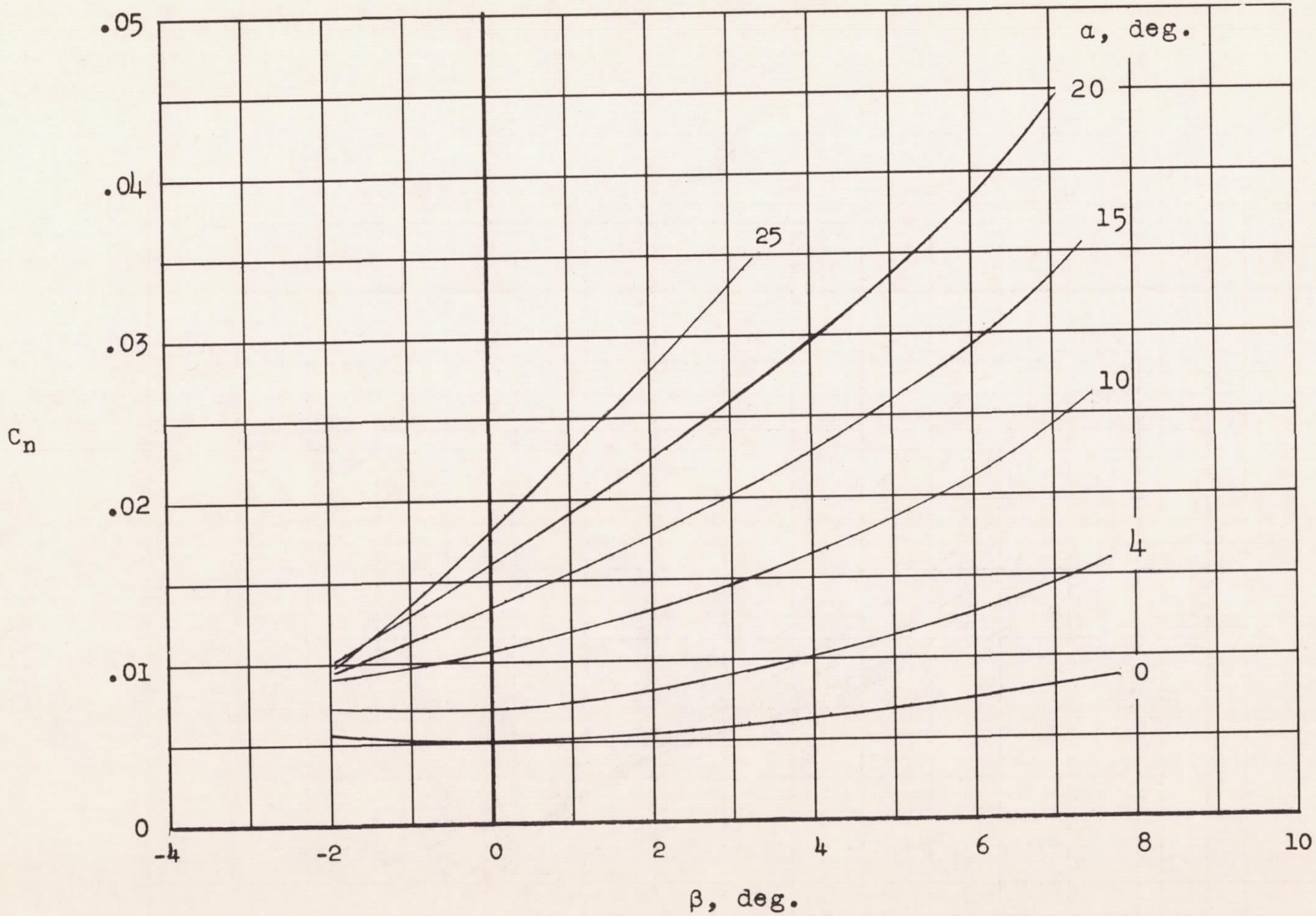
(d) $i_V = 2$.

Figure 25.- Continued.



(e) $i_V = 6$.

Figure 25.- Concluded.



(a) $i_V = -6$.

Figure 26.- Variation of yawing-moment coefficient with sideslip angle for horizontal-tail and bottom-vertical-tail configuration. M = 6.86; R = 343,000; body-axis data.

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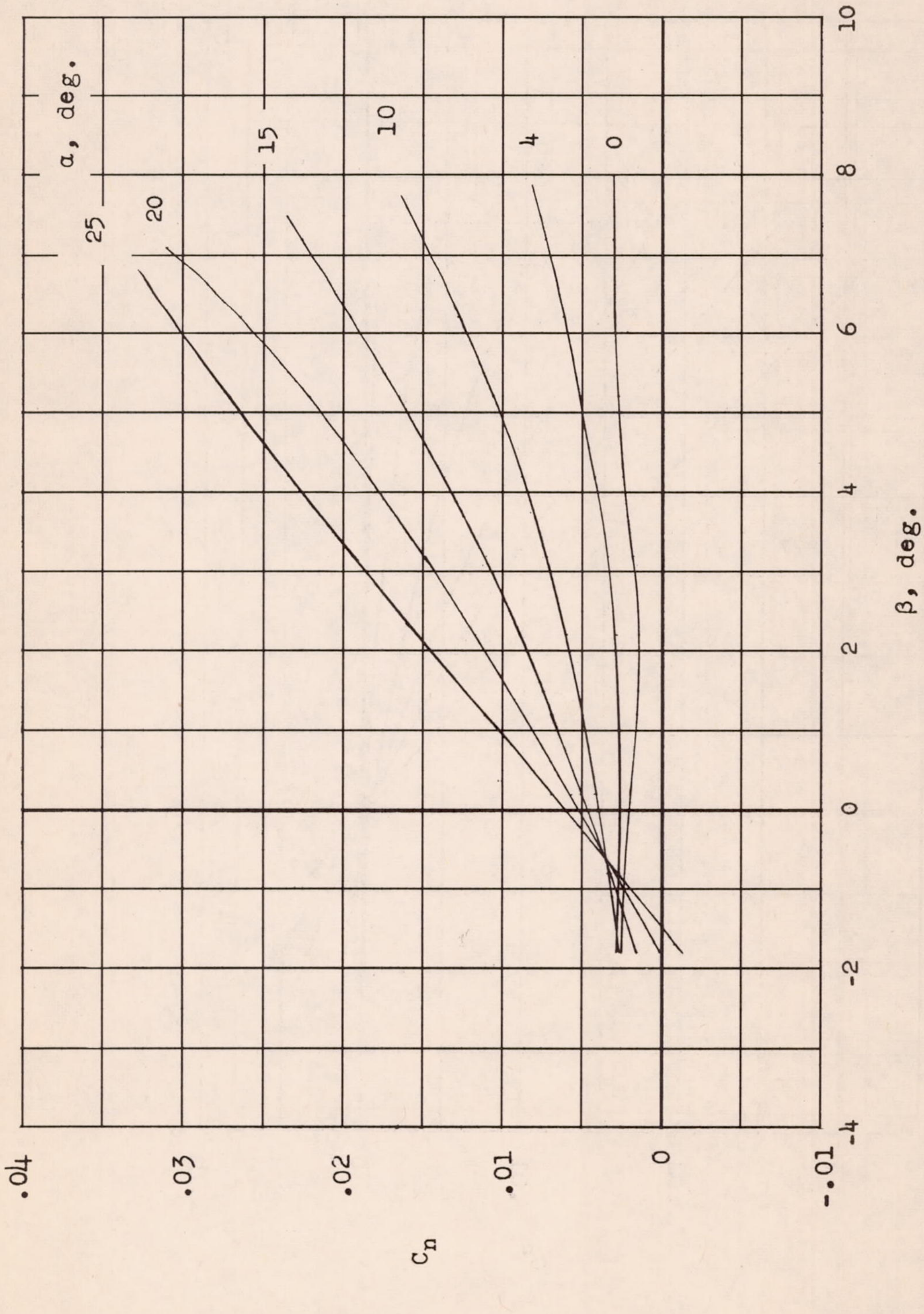
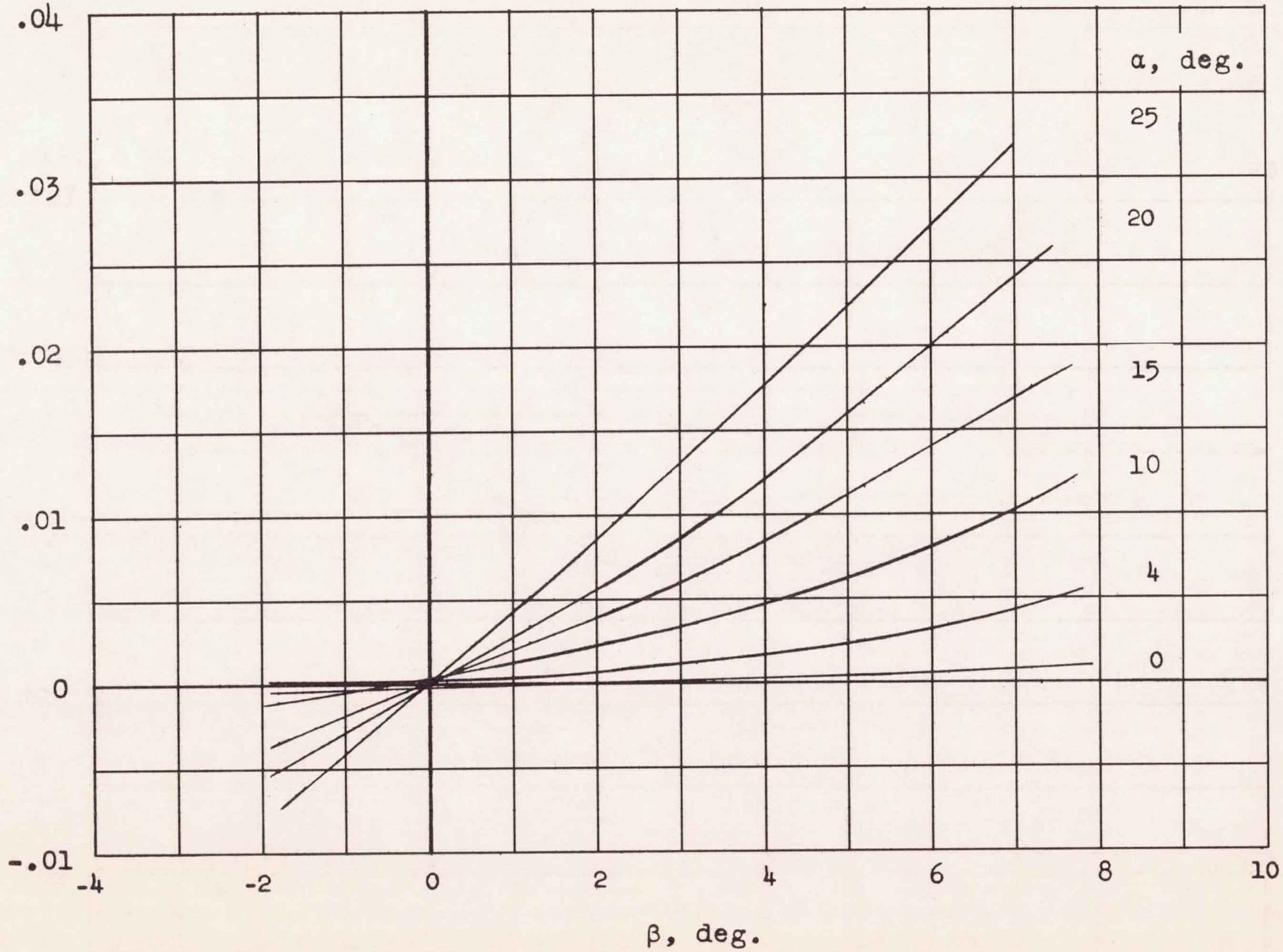


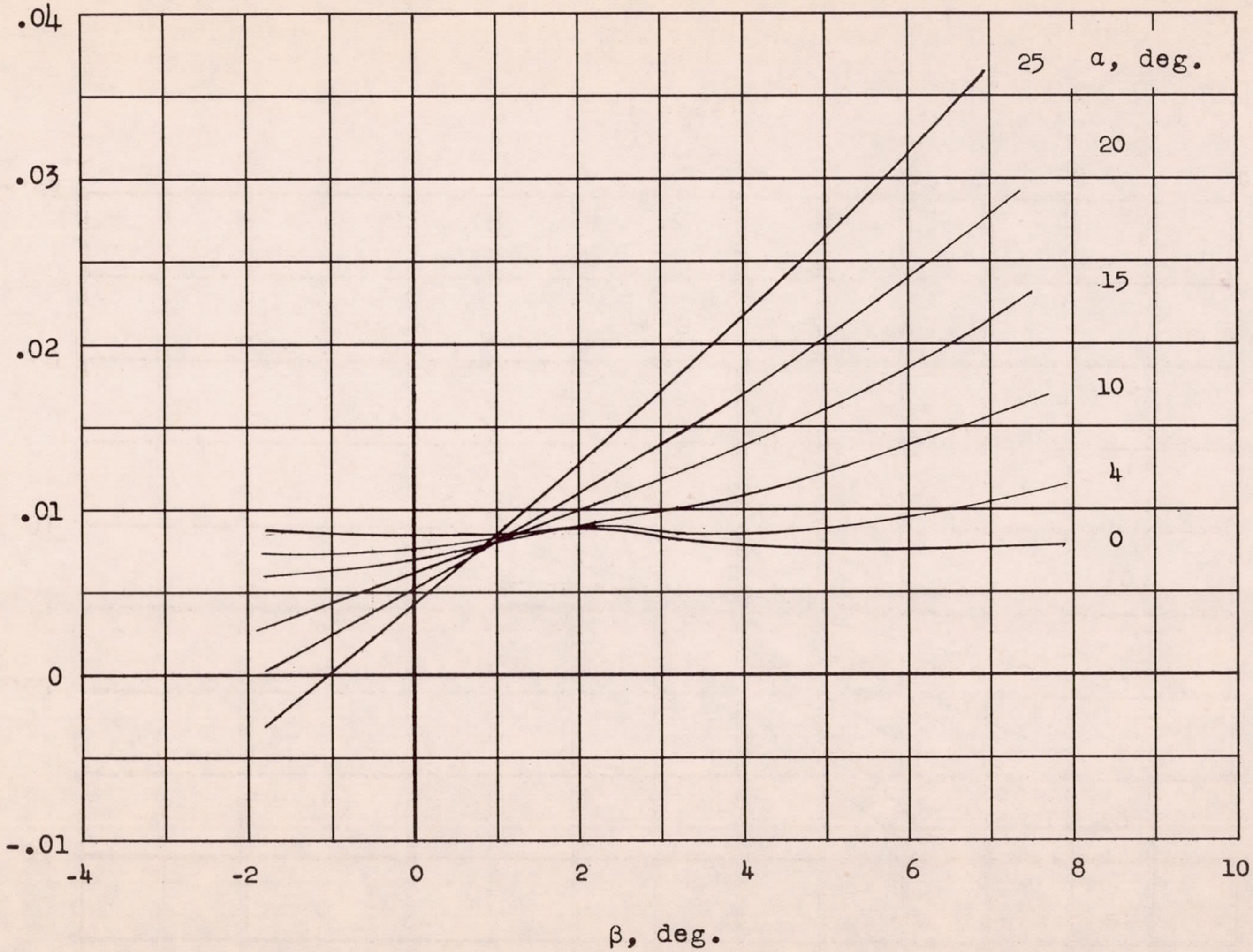
(b) $i_V = -2.$

Figure 26.- Continued.



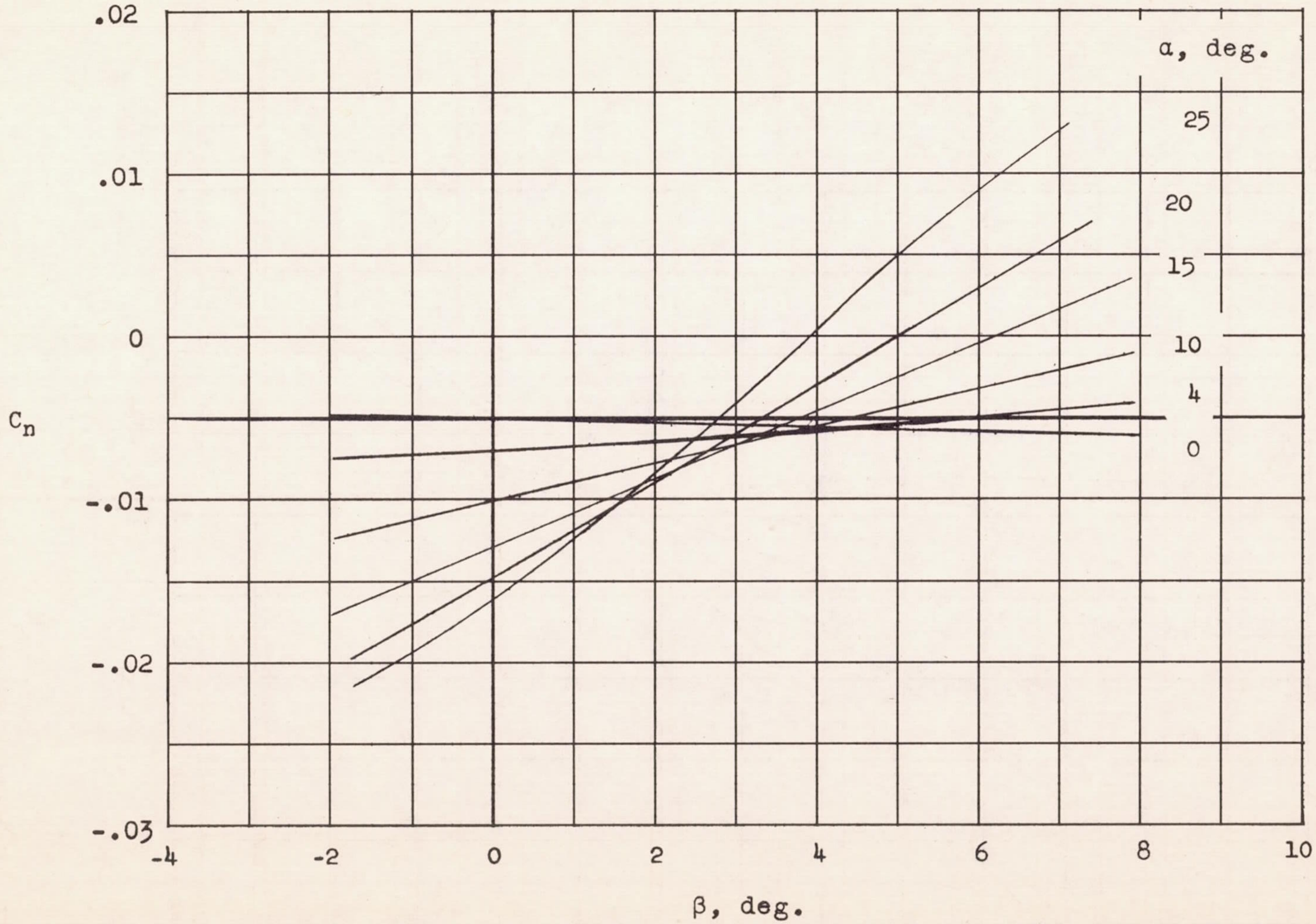
(c) $i_V = 0$.

Figure 26.- Continued.



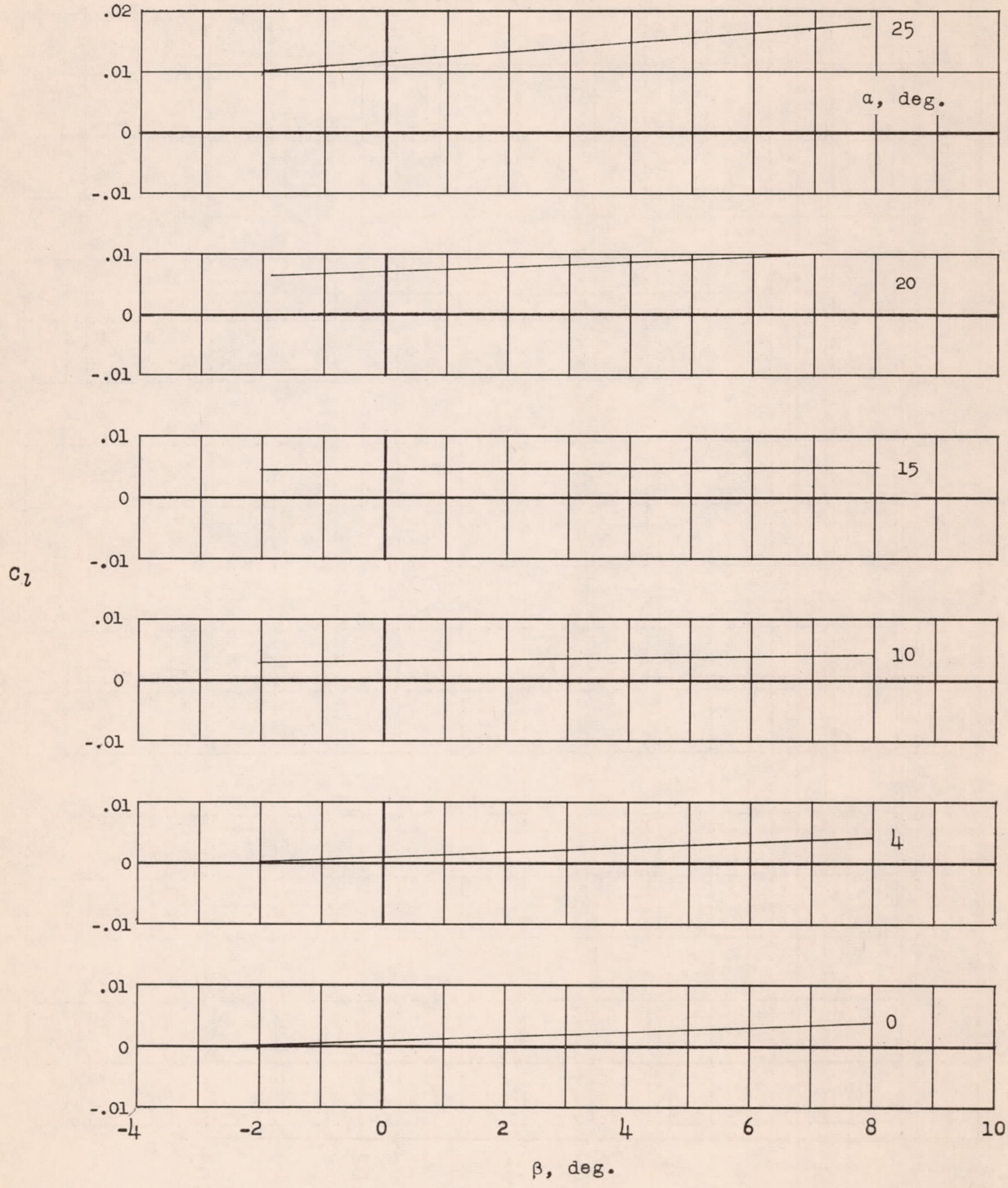
(d) $i_V = 2$.

Figure 26.- Continued.



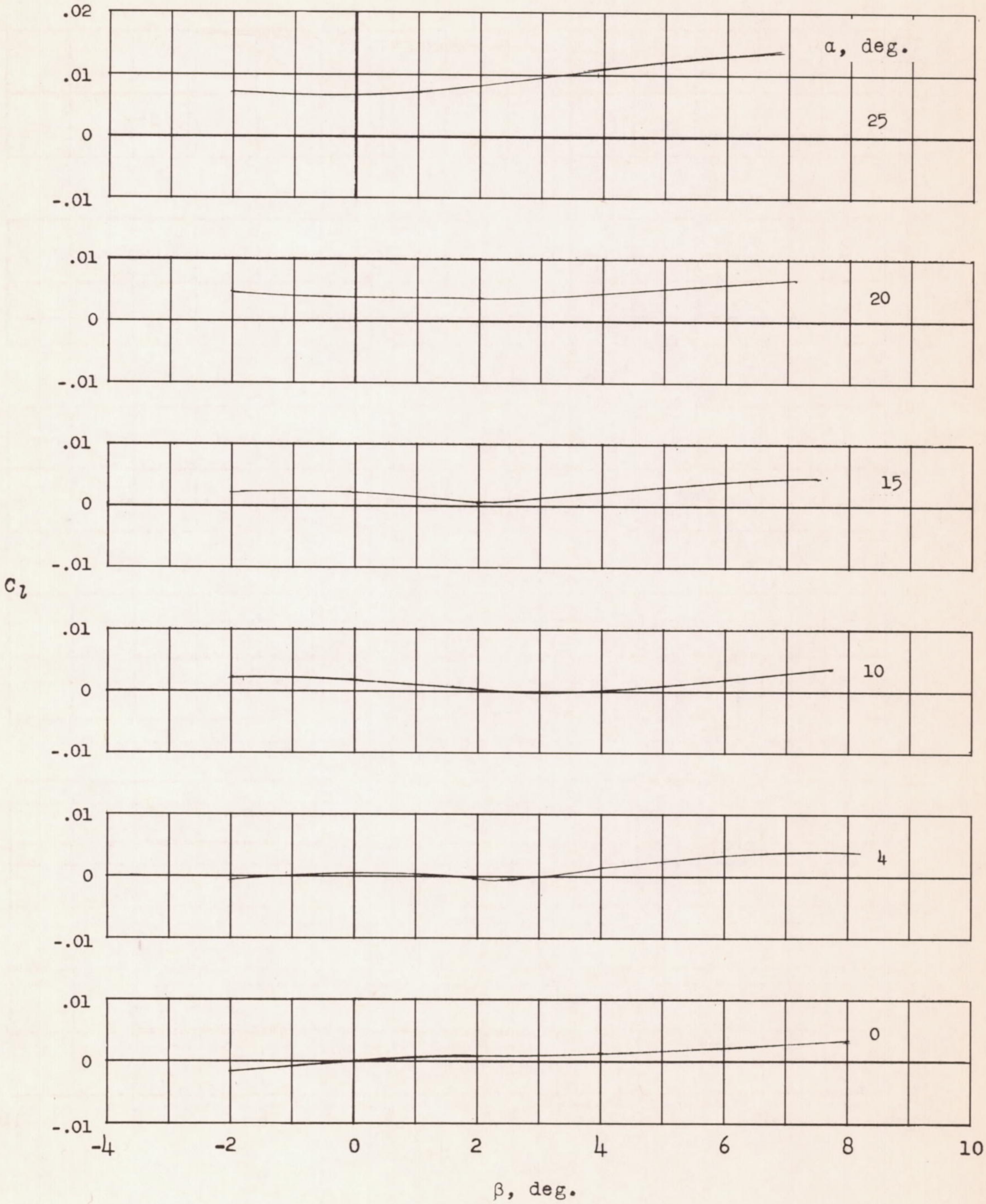
(e) $i_V = 6.$

Figure 26.- Concluded.



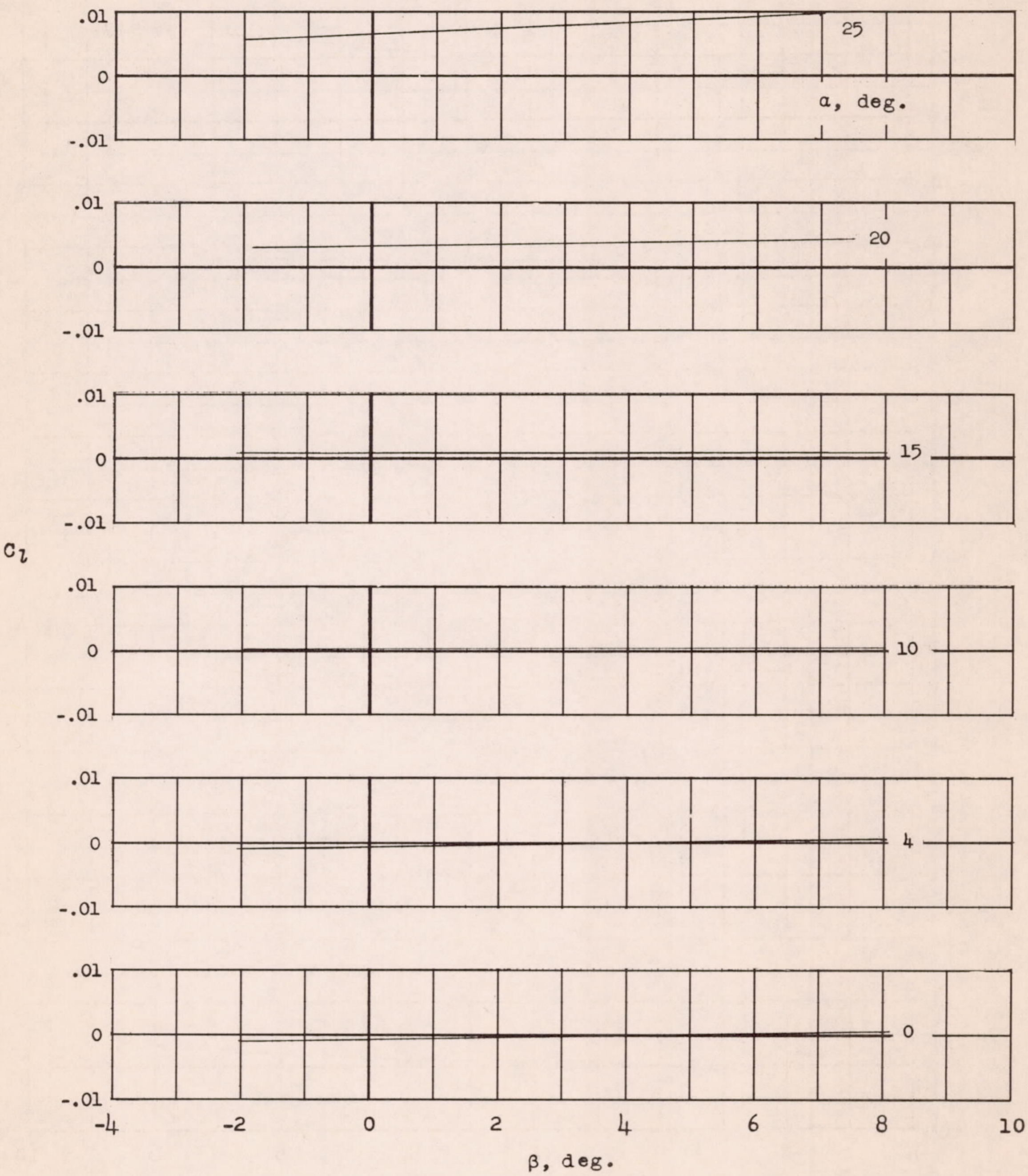
(a) $i_V = -6$.

Figure 27.- Variation of rolling-moment coefficient with sideslip angle for horizontal-tail and bottom-vertical-tail configuration. M = 6.86; R = 343,000; body-axis data.



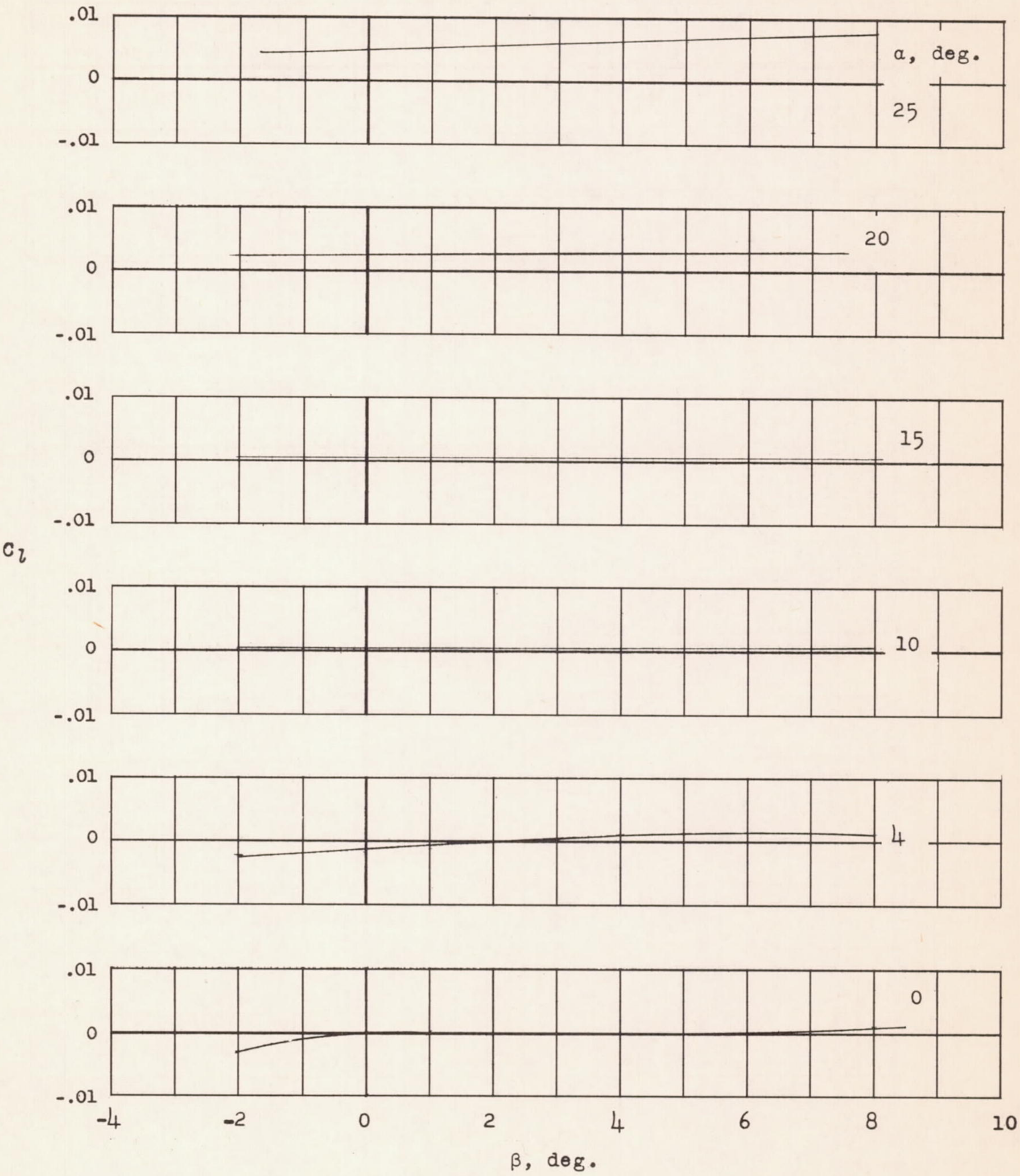
(b) $i_V = -2$.

Figure 27.- Continued.



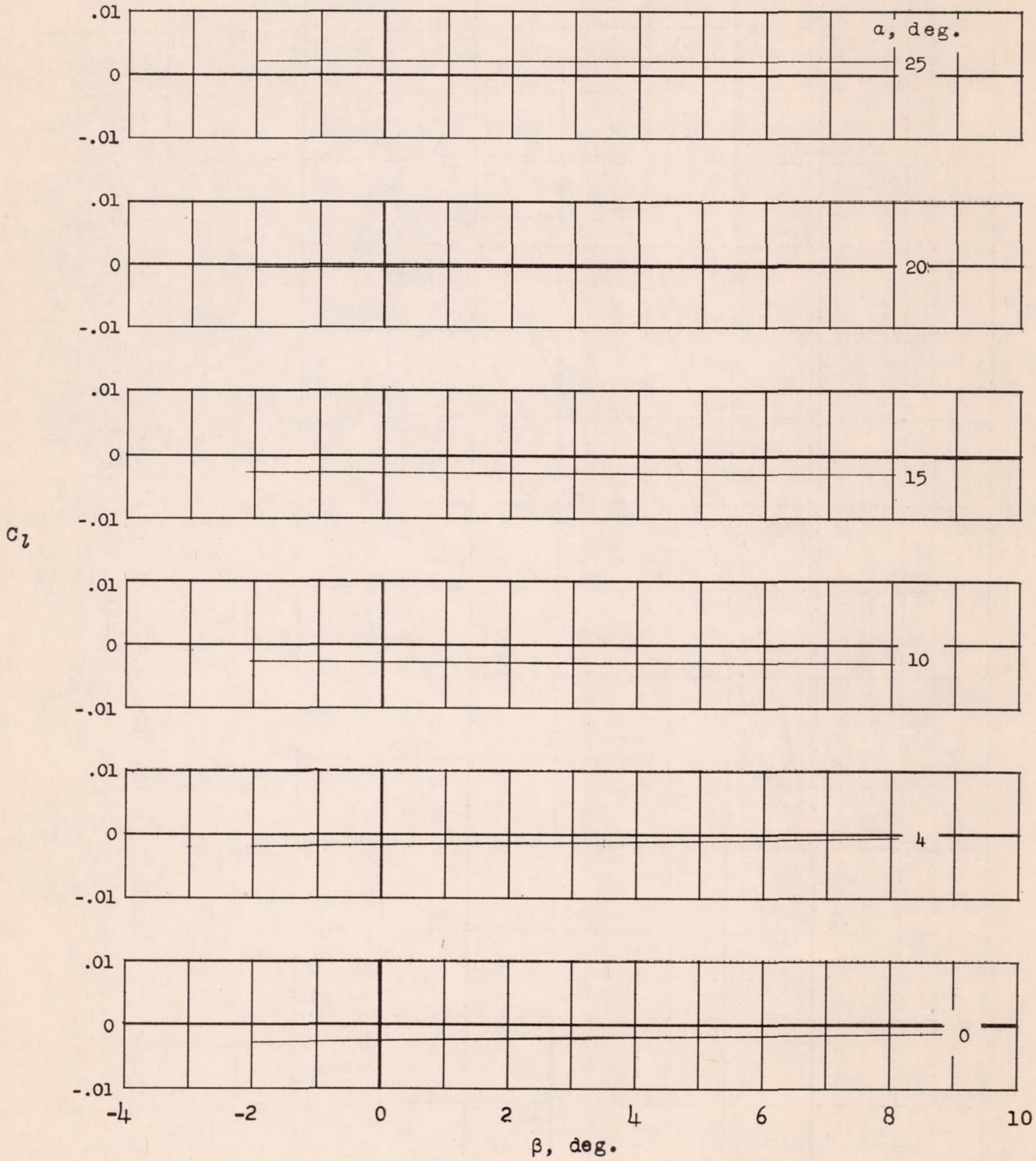
(c) $i_V = 0$.

Figure 27.- Continued.



(d) $i_V = 2$.

Figure 27.- Continued.



(e) $i_v = 6$.

Figure 27.- Concluded.

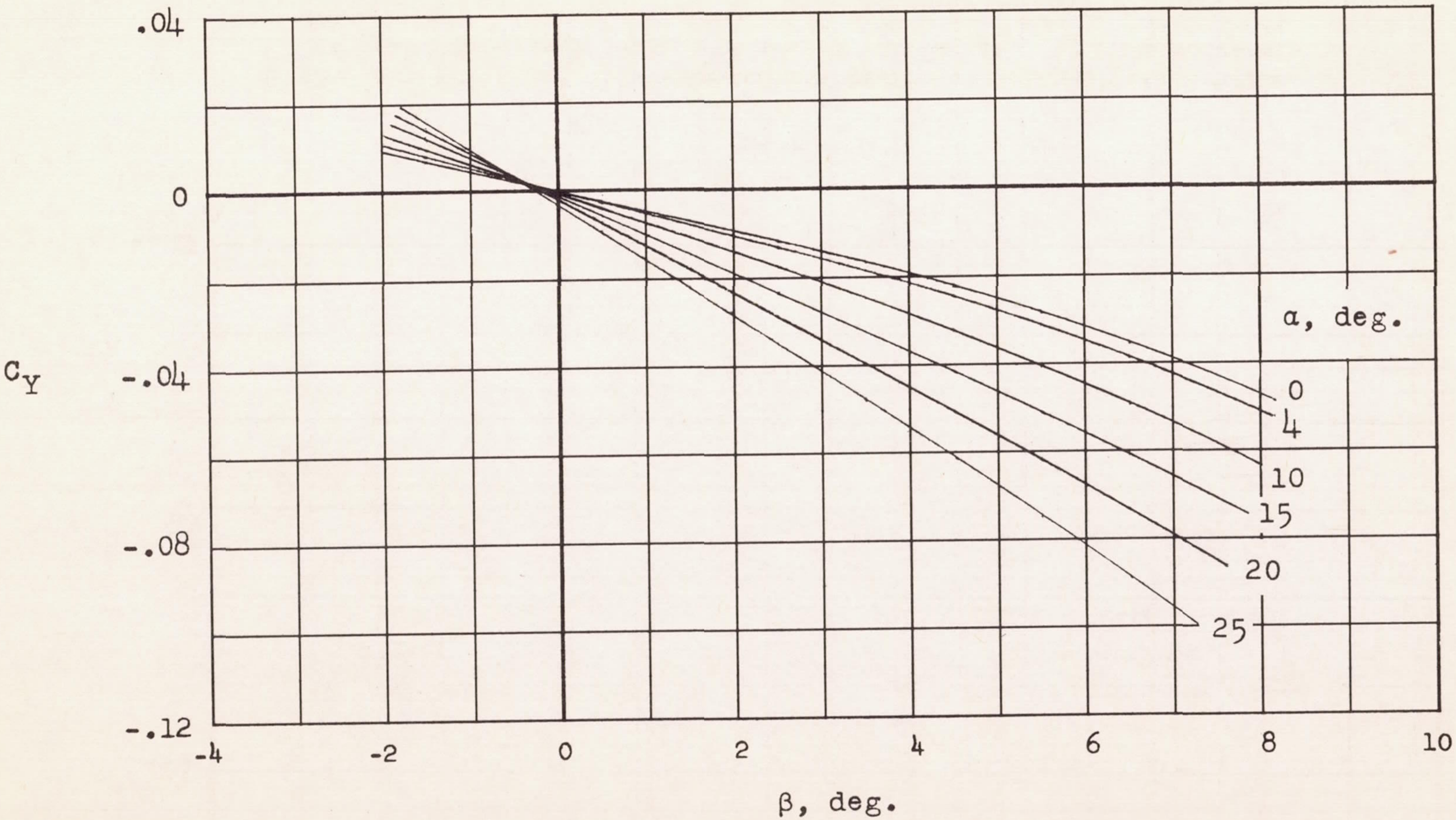


Figure 28.- Variation of lateral-force coefficient with sideslip angle for horizontal-tail configuration. M = 6.86; R = 343,000; body-axis data.

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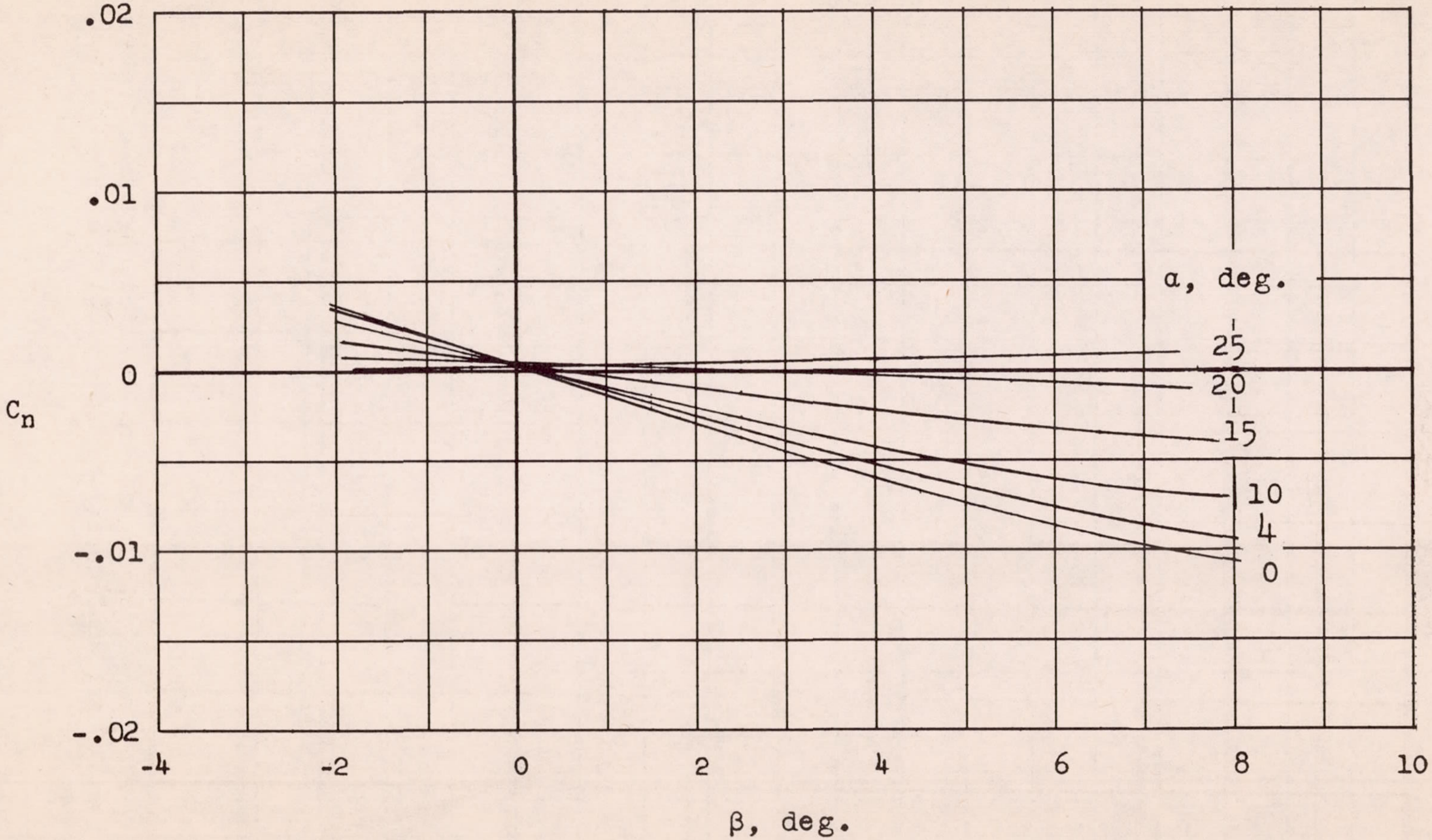

Figure 29.- Variation of yawing-moment coefficient with sideslip angle for horizontal-tail configuration. M = 6.86; R = 343,000; body-axis data.

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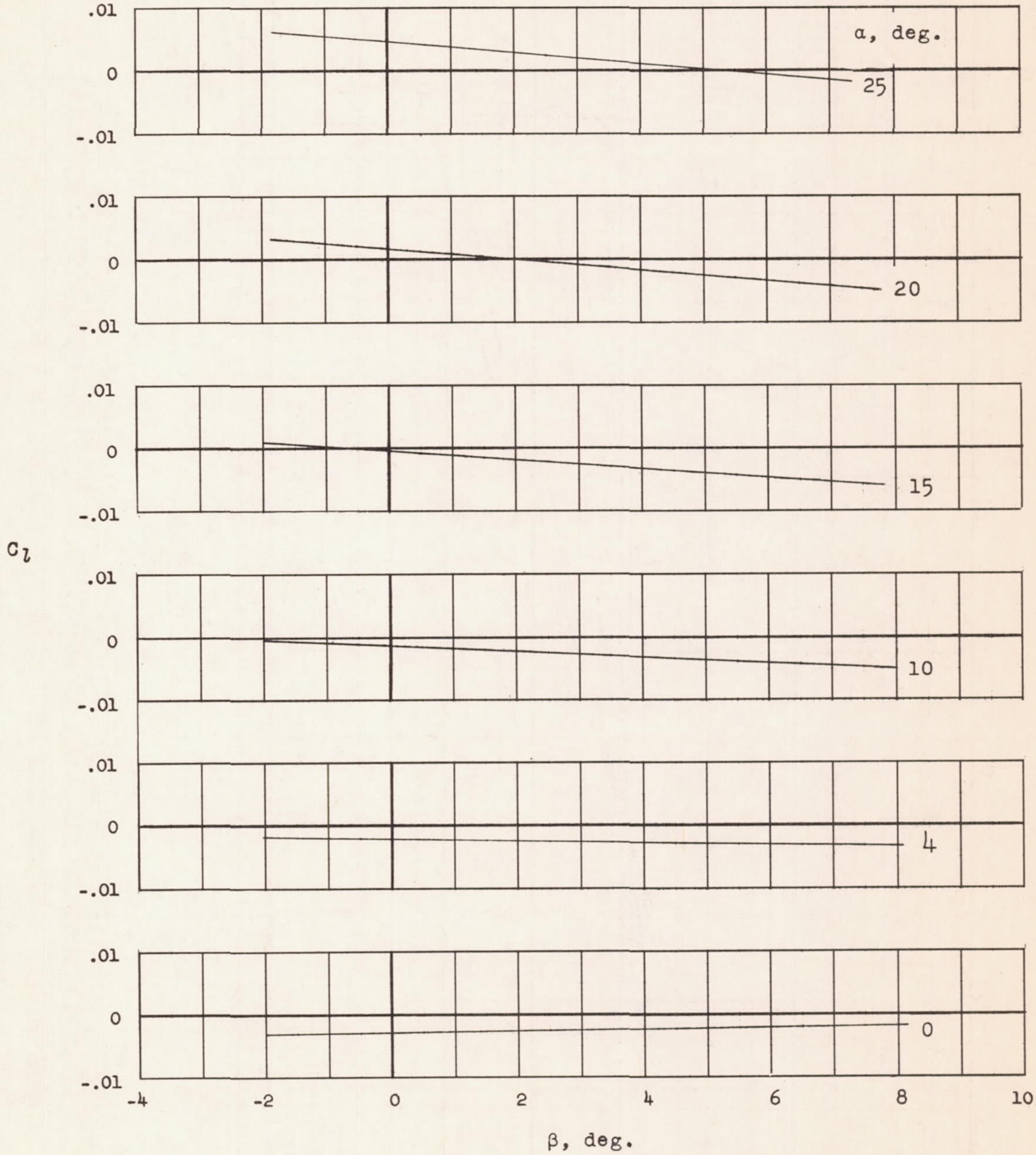

Figure 30.- Variation of rolling-moment coefficient with sideslip angle for horizontal-tail configuration. M = 6.86; R = 343,000; body-axis data.

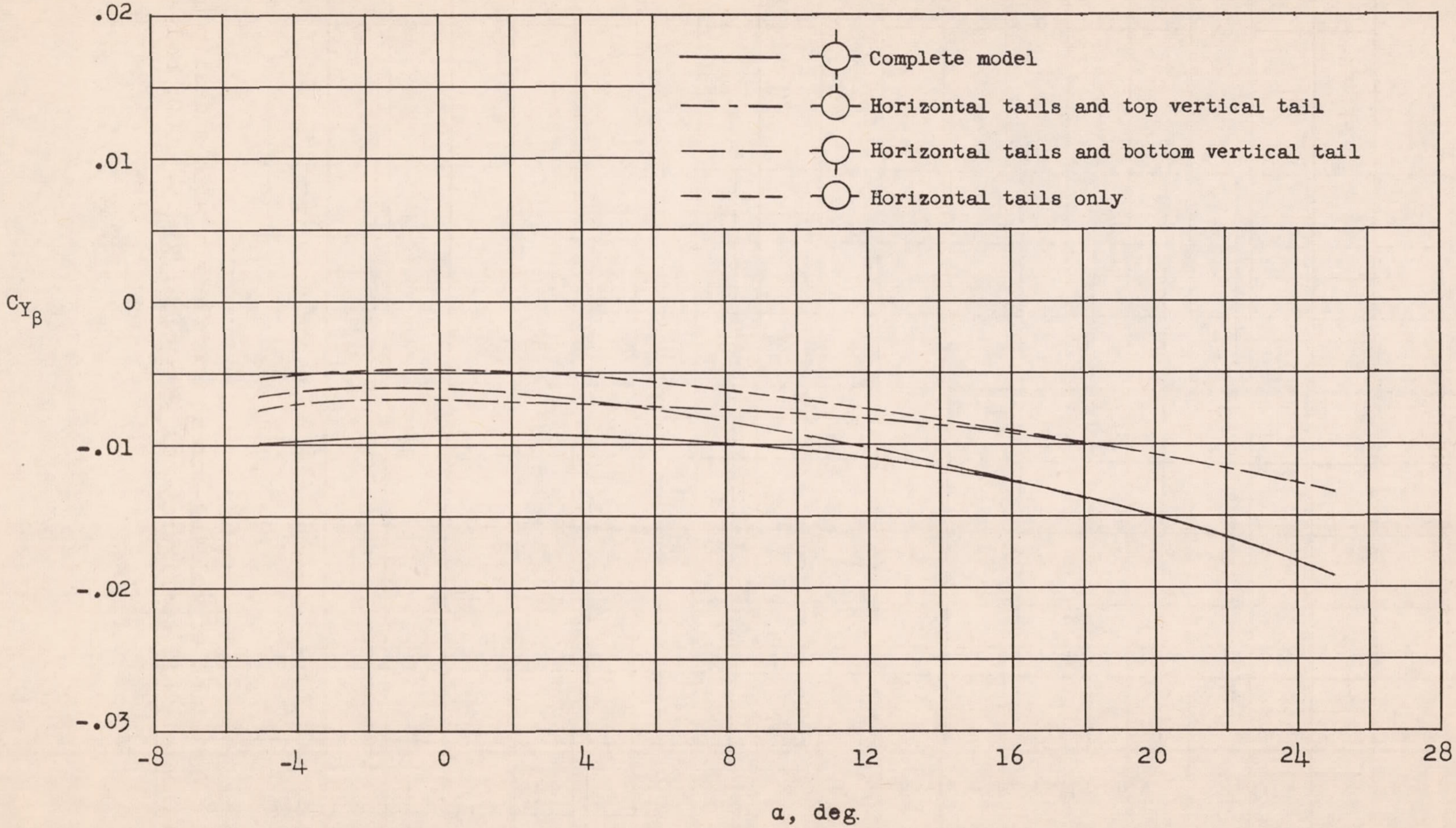

Figure 31.- Variation of C_{Y_β} with angle of attack for complete model and various combinations of its tail surfaces. M = 6.86; R = 343,000; body-axis data.

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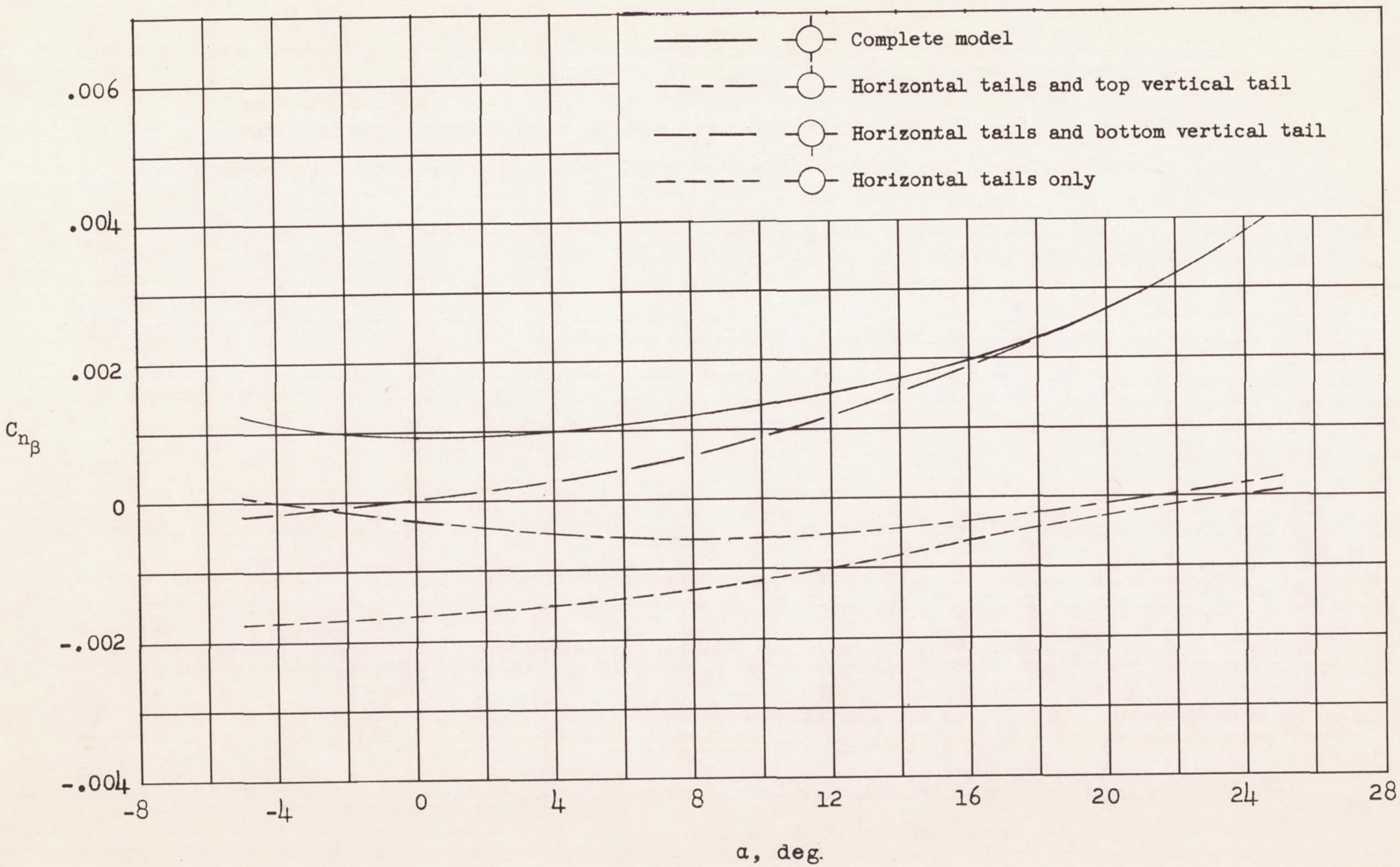

Figure 32.- Variation of C_{n_β} with angle of attack for complete model and various combinations of its tail surfaces. M = 6.86; R = 343,000; body-axis data.

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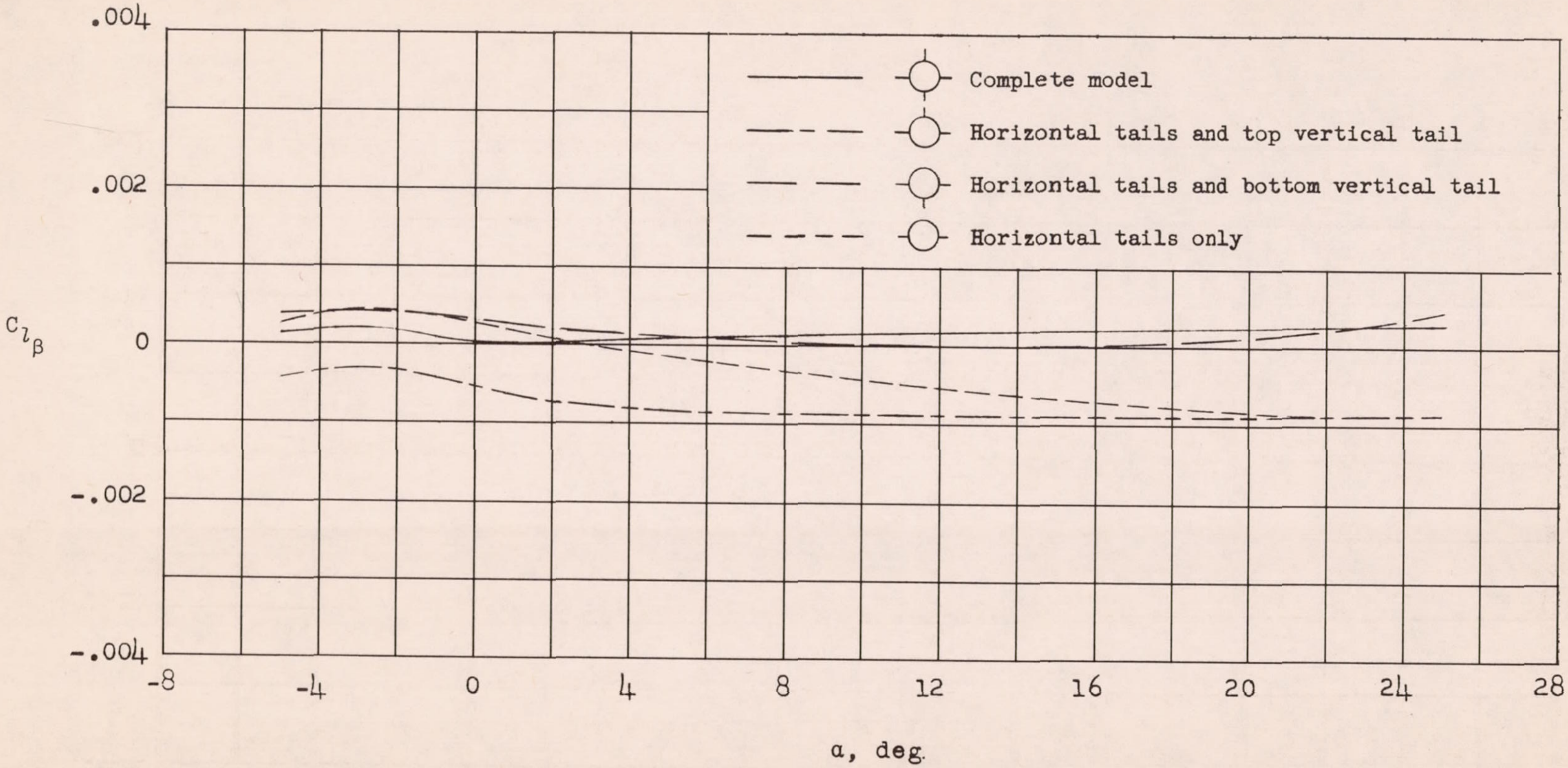

Figure 33.- Variation of C_{l_β} with angle of attack for complete model and various combinations of its tail surfaces. M = 6.86; R = 343,000; body-axis data.

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